THE DEVELOPMENT OF A MENTOR COMPETENCY QUESTIONNAIRE FOR A RACHEL'S ANGELS YOUTH MENTOR

by

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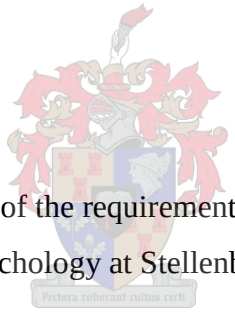

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DECLARATION

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Date: March 2016

ABSTRACT

South Africa's unique political history created a lasting legacy of unequal distribution in opportunities and skills across the youth of the country. Problems regarding such inequality are addressed through affirmative development, in an attempt to address the social problems. One such development scheme is the youth mentoring programme Rachel's Angels, a mentorship initiative that seeks to prepare adolescents for tertiary education by pairing each adolescent mentee with a senior student from the University of Stellenbosch in a mentorship relationship. The programme is a combined effort between the University of Stellenbosch, Naspers and Media24, and has reported successful mentor-mentee relationships and outcomes since its inception in 2006. However, formal research has not been conducted on the youth mentoring programme and as such there is no clear understanding of what differentiates a successful mentor at Rachel's Angels.

This study aims to conduct an in-depth analysis in what exactly differentiates a successful mentor from the less successful by focusing on mentor competencies needed within the framework of Rachel's Angels. Through an extensive literature study six mentor competencies were identified, namely: *Leading and Deciding; Supporting; Initiating, Communicating and Interacting; Adapting and Coping; Empathy and Sensitivity; Role-Modelling.* In a further attempt to understand the mentor-mentee relationship, the mentor competencies are linked with the mentee competency potentials which will give an insight into how mentor competencies influences mentee behaviours. Thus, these mentor competencies and mentee competency potentials were interlinked in order to form a theoretical Mentor Competency Model. In order to empirically test the competency model a measure of the mentor competencies would need to be developed and validated, namely the Mentor Competency Questionnaire. Such a competency questionnaire will further the ideals of affirmative development within Rachel's Angels, as a 'blueprint' of the ideal mentor and may be used for the selection, recruitment, performance evaluation of mentors, and development of programmes within Rachel's Angels, which may increase the impact and success of the mentorships themselves.

This study is therefore develops and empirically evaluates the psychometric properties of the Mentor Competency Questionnaire by examining and analysing the measurement model implied by the design of the MCQ through the indices offered by LISREL 8.8. The hypotheses of exact fit had to be rejected in favour of the close fit hypothesis (H_{02}: $p < .05$).

The position that the MCQ measurement model fits the data closely in the parameter was found to be a tenable position. The fit indices reflected good or reasonable model fit in the sample. The measurement model parameter estimates indicated that the indicator variables represented the latent mentor competencies satisfactorily. Discriminant validity was found to be severely problematic and the six mentor competencies as measured by the MCQ can therefore not be stated to be qualitatively distinct.

This study represents the maiden research conducted of youth mentoring placed in the realm of competency research and as such delivers a valuable contribution to the future of youth mentor competency research.

OPSOMMING

Suid-Afrika se unieke politieke geskiedenis het ’n blywende nalatenskap in die jeug van die land gelos in terme van ongelyke verspreiding van geleenthede en vaardighede. Hierdie probleme van ongelykheid word aangespreek deur regstellende ontwikkeling, wat poog om die sosiale probleme op sigself aan te spreek en nie net die simptome van die sosiale ongelykhede te behandel nie. ’n Voorbeeld van so ’n ontwikkelingskema is die jeugmentorskap-program Rachel’s Angels – ’n mentorskap-inisiatief wat mik om adolessente voor te berei vir tersiêre onderwys deur hulle saam met senior studente van Stellenbosch Universiteit in ’n mentorskapsverhouding te plaas. Die program is ontwikkel as ’n gesamentlike poging van Stellenbosch Universiteit, Media24 en Naspers, en bewerkstellig sedert die program se ontstaan in 2006 suksesvolle mentor-mentee verhoudings en uitkomste. Daar het egter nog geen formele navorsing plaasgevind wat ’n suksesvolle mentor in die Rachel’s Angels mentorskapsprogram definieer nie.

Die doel van hierdie studie is om die bevoegdhede wat ’n suksesvolle mentor van ’n minder suksesvolle mentor onderskei te bepaal deur middel van ’n in-diepte analise binne die raamwerk van Rachel’s Angels. In ’n uitgebreide literatuurstudie is ses mentorbevoegdhede geïdentifiseer, naamlik: *Leierskap en Besluitneming; Ondersteuning; Inisiëring, Kommunikasie en Interaksie; Aanpassing en Hantering; Empatie en Sensitiwiteit;* en *Rol-Modellering.* In ’n verdere poging om die mentor-mentee verhouding te verstaan, is die mentorbevoegdhede gekoppel aan die mentee-bevoegdheidspotensiale om sodoende verdere insig rakende presies hoe mentor-bevoegdhede die mentee se gedrag beïnvloed te verky. Hierdie mentorbevoegdhede en mentee-bevoegdheidspotensiale word dus verbind in ’n Mentor-Bevoegdheidsmodel. Die empiriese toetsing van hierdie bevoegdheidsmodel was dus om ’n meetinstrument van mentorvaardighede te ontwikkel in die vorm van ‘n Mentor-Bevoegdheidsvraelys. So ’n bevoegdheidsvraelys sal dus die ideale van regstellende ontwikkeling binne die raamwerk van Rachel’s Angels bevorder, deurdat die meetinstrument gebruik kan word vir die keuring, werwing en prestasie-evaluering van Rachel’s Angels mentors. Die bevoegdheidsvraelys kan die impak en sukses van die jeugmentorskapsprogram op sigself verhoog en verbeter.

Die studie is gemik op die ontwikkeling en evaluering van die psigometriese eienskappe van die Mentor-Bevoegdheidsvraelys. Dié ontwikkeling en evaluering behels die ontleding van die metingsmodel wat geïmpliseer word deur die onderliggende ontwerp van die Mentor-Bevoegdheidsmodel deur die statistiese indekse soos aangebied deur LISREL 8.8 te

analiseer. Die hipoteses van presiese passing is verwerp ten gunste van die hipotese vir naby passing (H_{02}: $p < .05$).

Die houdbare posisie dat die Mentor-Bevoegdheidsmetingsmodel die data naby pas in die parameter is gevind. Die pasindekse van die model weerspiëel goeie of redelike pas in die steekproef, afhangend van die strengheid van die spesifieke pasindeks. Volgens die metingsmodel-parameter-ramings verteenwoordig die aanwyserveranderlikes die latente mentorbevoegdhede op ’n bevredigende wyse. Die diskriminante geldigheid is egter as problematies bestempel aangesien die ses mentorbevoegdhede nie kwantitatief van mekaar onderskei kan word nie.

Hierdie studie verteenwoordig die nooiensvaart van jeugmentorskapsnavorsing waar die twee velde van jeugmentorskap en bevoegdheidstudies bymekaargebring word. Sodanig is ’n waardevolle bydra gelewer vir die toekoms van jeugmentorskapbevoegdheidsnavorsing en jeugmentorskapsnavorsing op sigself.

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1.1 INTRODUCTION

"A mentor is someone who sees more talent and ability within you, than you see in yourself."

Bob Proctor (n.d.)

Author

A mentorship, at its core, is the process of identifying and unlocking potential in another person. The objective of youth mentoring, as a narrower field of interest, is to introduce children to the notice of caring, compassionate non-parental adults. The focus of this research was to identify the key aspects of the ideal profile of a student mentor in the Rachel's Angels youth mentorship programme in terms of competencies. The following introductory section will flesh out what exactly the concept of youth mentoring entails and how this links with the day-to-day work of the Rachel's Angels organisation.

1.1.1 MENTORING: A METEORIC RISE IN POPULARITY

Mentoring is defined as a dyadic psychosocial intervention that takes place in a close relationship between two individuals, where one individual provides support and guidance in the academic, career, social and/or psychological spheres of the second individual (Rhodes, 1994). The concept of mentoring is practically ancient, as the term itself derives from Homer's *The Odyssey*, where a similarly named character provided guidance for Odysseus' son in the absence of his father. The impact and effect of mentoring as a whole has been much debated amongst scholars (Darling, Hamilton, & Niego, 1994; Langhout, Rhodes, & Osborne, 2004), with historical mentoring relationships tends to promote the possibility of successes in such relationships. Socrates and Plato, Michelangelo and Lorenzo de Medici, Leonardo da Vinci and Verrochio, Carl Jung and Sigmund Freud - a list of mentor/protégé relationships that cultivated and nurtured talent and in so doing changed the parameters of human knowledge.

Mentoring in practice generally takes place as either youth mentoring, mentoring in an academic setting or in an organisational/work setting. Youth mentoring as a preventative intervention has become increasingly popular on a global scale, especially for youth in high risk circumstances (Langhout, Rhodes, & Osborne, 2004). In the USA, the rising popularity

of youth mentorships has led to two and a half million youth participants in mentoring programmes across the country, with the most notable program being the Big Brother Big Sisters initiative (Rhodes, Reddy, Roffman, & Grossman, 2005). The U.K., Canada, Australia and South Africa has shown increases in both the number of programmes and participants of youth mentoring (Rhodes *et al.*, 2005). In South Africa several programmes have been launched, including Big Brothers Big Sisters SA, Rachel's Angels, Heartline's Youth Mentors, IkhamvaYouth and SA-Yes.

The rise in mentorships globally can be attributed to the perceived positive outcomes of such initiatives. The positive outcomes of mentoring rests on the assumption that by forging close relationships with children, mentors provide consistent guidance and emotional support and thus influences the day-to-day behaviour of mentees. Mentors stimulate change in their mentees through providing an example and model of ideal behaviours (DuBois & Neville, 1997). Through being a supportive model of success, mentors facilitate improvements in adolescents in the different spheres of their lives, including parental, academic, social and psychological (Grossman & Rhodes, 2002). In addition, Darling, Hamilton, & Niego (1994) suggests that these influences of the mentor occurs through three possible routes: (1) direct or indirect feedback that influences the youth's self-concept (2) role modelling normative behaviours and values that serves as a reference (3) direct instruction of skills and abilities.

Research supports the instinctive hypothesis of improvement facilitation, as an evaluation of volunteer youth mentorship programmes by DuBois & Neville (1997) indicated numerous positive developmental outcomes for mentees participating in such initiatives. Mentees experienced improvements in academic achievement, self-concept, prosocial behaviour and interpersonal relationships either directly or indirectly through the involvement of mentors (DuBois & Neville, 1997). Furthermore, research indicates that youth mentoring is particularly valuable and influential to adolescents identified as high risk cases because of their disadvantaged backgrounds, as participation in such a programme promotes psychosocial resilience (Rutter, 1990).

Practical examples of the improvement in adolescent lives due to participation are cited by nearly all individual organisations offering youth mentoring programmes. Big Brothers Big Sisters alleges that participants in their programme are 27% less likely to start using alcohol, 46% less likely to use illegal drugs, and 52% less likely to skip school (End The Wait, 2014). A study by Brigham Young University found that disadvantaged teenagers engaged in a mentoring programme were twice as likely to attain a tertiary education ("Benefit of a

Mentor: Disadvantaged teens twice as likely to attend college", 2014). A similar study conducted by the University of Georgia found that teens experiencing hardships were less likely to commit a crime or engage in substance abuse (Alpin, 2014). However, advantages of mentoring are not reported exclusively for adolescents of disadvantaged backgrounds as a study by Price-Mitchell (2013) illustrated. Price-Mitchell (2013) established that regardless of income level, adolescents benefitted intellectually, interpersonally and emotionally from supportive mentors. Furthermore, in the South African context, Rachel's Angels have reported a matric pass rate of 100% for the mentee's for 2013, an improvement from the 92% in 2009 (Nanny, 2014). With these positive results as well as the modest correlations found by Dubois & Neville (1997) it is no wonder that youth mentoring programmes have experienced a rise in popularity as a valid form of intervention.

Another possibility for the meteoric rise in the prevalence of youth mentoring programmes can be attributed to the lack of natural mentors to guide youths. Before the development of any sort of mentorship programme, adolescents throughout history were guided by caring adults who naturally served as leaders, role-models and agents of change. These adults are dubbed "natural mentors", and according to Rhodes *et al.* (2002) decreased in the past couple of decades because the "social fabric is stretched particularly thin in urban centres" – were mentors are most needed (p. 151). Thus, the rise in volunteer mentors and mentoring programmes can be attributed to the "filling of a gap", created by rampant urbanisation and poverty in cities.

The idea that youth mentoring is linked to poverty and disadvantaged areas is especially apt in the South African context. The social picture of South Africa at the end of Apartheid was one of widespread inequalities in education, income and opportunities (Flores-Aroaz, 2011). Methods to intervene and address these social problems were launched by government and private companies alike, one example of which is youth mentoring programmes. Several programmes focus exclusively on improving the lives of adolescents in previously disadvantaged communities (SA-Yes; Young & Able Youth Advisory Services; Heartlines Youth Mentors; Bokamoso Youth Programmes; YIASA) or addressing the inequalities of past education (IkamvaYouth; Rachel's Angels; UNICEF Techno Girls).

The increasing popularity of youth mentorship programmes in South Africa can also be attributed to the Corporate Social Responsibility (CSR) initiative in legislation. Though not formally included in the South African Companies Act 61 of 1973, South African companies can qualify for additional tax incentives and a higher BBBEE score if they utilise more than

1% of their net profits after tax on CSR initiatives (Flores-Aroaz, 2011). Thus, through legislation, funding has been made available for non-profit organisations such as youth mentoring programmes which contributes to its rise in popularity.

It is precisely because of above mentioned legislation, the history of South Africa and perceived benefits of youth mentoring both in practice and theory that the organisation Rachel's Angels came into being.

1.1.2 RACHEL'S ANGELS: A HOLISTIC INTERVENTION

In 2006, a collaboration between Professor Jakes Gerwel of Media24, Koos Bekker of Naspers and Prof. Rachel Jafta of Stellenbosch University resulted in the creation of an empowerment project focused on building excellence in high school education in the Western Cape (About Us, 2014). The programme's original aim was to better prepare Grade 11 and 12 learners for post matric challenges. This would be accomplished by pairing each pupil with a student mentor to help guide them through the final phase of their schooling.

Through the collaboration of the above mentioned three individuals, Rachel's Angels trust was set up in 2006. Named after Prof. Jafta herself, the trust is managed by a number of trustees, all of which have links with one of the founding institutions. Under the leadership of Prof. Jafta, the first intake of student mentors and adolescent mentees began in 2007.

The trust itself is made up of a number of BBBEE shares and monetary support from Media 24, which is the print media arm of the South African media company Naspers. The media conglomerate contributes towards Rachels' Angels mainly through funding, as the programme constitutes Media 24's largest corporate social investment project. Stellenbosch University contributes towards the project by allowing campus visits for pupils, making campus venues available for Rachel's Angels activities and by providing the expertise of the Industrial Psychology department in both the development of the programme and the selection of mentors.

The youth mentoring programme constitutes a cycle of two years. 140 learners from 20 schools - whose vision is aligned with the trust - are paired with 140 student mentors from the University of Stellenbosch. Student mentors and participating schools and learners are identified every second year, thus allowing the mentorship to continue for the Grade 11 and Grade 12 years of the adolescent. The two year duration of mentorship is seen as very advantageous, both in practice and theory, as Rhodes *et al.* (2005) stressed the fact that the

mentor-mentee relationship needs to surpass the 12 month mark in order to develop positive outcomes for the mentee.

Recruitment for both schools and students occur during a three month stint from June onwards, every second year. Student mentor application forms are made available in online forums, including www.rachelsangels.co.za, www.media24.com and www.sun.ac.za. In addition, recruitment is advertised on social media platforms such as Facebook and Twitter. Rachel's Angels has also extended recruitment to a booth in the Neelsie Student Centre in order to attract more student interest and to provide application forms to prospective mentors.

Students are chosen based on a pre-determined criteria. Students are required to have an academic aggregate of at least 60% and to have been previously engaged in volunteering activities. Furthermore, they have to be available for the two year duration of the programme – this stipulation therefore excludes all students in their final year of tertiary education. Based on the above preliminary criteria students are screened and whittled down to a pool of 200 prospective mentors. These undergraduates progress past the screening phase and undergo psychometric testing, conducted by the Department of Industrial Psychology. The final selection and pairing of mentors occurs in October every second year.

The process of selecting participating schools seems to be much simpler than that of the mentor selection process. Booklets of invitation are sent to 50 previously disadvantaged and multi-cultural schools by the Rachel's Angels administrators. Each school has an opportunity to pitch their school portfolio, along with 15 pupils whom they believe show the most potential for growth and development. The Board of Trustees vote on which 20 schools will be allowed to participate in the following two year cycle. In addition, the group of learners from each school are narrowed down from fifteen to only seven. Thus, the final 280 students and mentors are chosen.

The programme itself is developed in order to address three facets of the pupil's life: academic, social and psychological. Activities in the programme includes campus visits, attending lectures, interactive workshops and an entrepreneurial day – all of which mentors and mentees participate in alongside one another. In addition, mentors are encouraged to have regular contact with their mentees, either in person or through electronic communication such as email, WhatsApp or MXit. The theory behind the programme is that through the experiential learning, mentoring by peers, exposure to academic life and the realities of the

business world, learners will be equipped to handle the post-matric challenges that they face and play a meaningful role in society.

The intervention in itself has been deemed a success according to its head manager, Spurgeon Wilson (2014). An increase of 8% in the national matric exams has resulted in a 100% pass rate for the 2010/2011 programme. Furthermore, the amount of pupils to continue with their tertiary education has apparently increased dramatically (however, no statistics are available of this as of yet). The successes of the youth programme aimed at previously disadvantaged pupil ought to be lauded in modern day South Africa, nevertheless the initiative is not without its problems.

The amount of mentors not completing the full program is a very real problem and a critical factor in the success of the mentee (Wilson, 2014). Unfulfilled expectations can leave mentees with feeling of abandonment and personal inadequacy, as Spencer (2007) found, leading to an increased risk of anti-social behaviours by the jilted youths. Some mentees also report that they do not "connect" with their mentors and are afraid to reach out and ask for help, thus alluding to improper personality matches between the two parties. Furthermore, the personality clashes between mentors and mentees have been described as "traumatic" to both parties – leading to an increased demand of proper matching techniques between the two parties.

Thus, it can be concluded that further research is needed to determine the exact profile and competencies required of the ideal Rachel's Angels mentor and youth mentorship programmes as a whole, as there is no clear academically generated model that measures these constructs. The research regarding the mentor competency profile would include the personality characteristics, academic background, socio-economic and cultural factors and past experience of volunteering of the ideal mentor. A scientific method of measuring the success of the mentor and thus the adequacy of the relationship is also justifiably needed in the quest to create successful youth mentoring interventions. Such a method will take the form of a Mentor Competency Questionnaire, which will measure each of the competencies required to be a Rachel's Angels mentor.

The following thesis focuses on the theoretical development of a Mentor Competency Model, which takes into account the relationship between mentor and mentee. After the theoretical model was developed, a Mentor Competency Questionnaire followed, as a logical first step in quantitatively measuring the mentors of Rachel's Angels.

1.2 RESEARCH INITIATING QUESTION

"What are the competencies needed to be successful as a student mentor in the context of Rachel's Angels? What competency potentials of the mentee are influenced by the competencies of the mentor? How can the competencies of the mentor thusly be measured?"

1.3 RESEARCH OBJECTIVES

The specific objectives of this research study include:

- Determining the objectives that successful student mentor would need to achieve during the duration of the mentorship programme.
- Determining the objectives that a successful mentee would need to achieve during the duration of the mentorship programme.
- Determining the competencies required in order to enact the roles that mentors fulfil during the mentorship programme.
- Determining the competency potentials required in order to be a successful mentee.
- Creating a theoretical Mentor Competency Model that depicts the relationships between the mentor competencies and mentee competency potentials.
- Developing the Mentor Competency Questionnaire in order to empirically measure the mentor competencies of Rachel's Angels mentors.

2. LITERATURE STUDY

2.1 INTRODUCTION

The previous section explained the rapid rise in popularity in youth mentorships as a whole and emphasised the need to develop a theoretical competency model for the mentors participating in such programmes in order to ensure the effectiveness and success of the programmes as a whole. Such a theoretical model will then be used as the basis to develop the Mentor Competency Questionnaire. The previous section also indicated that the current study focused on youth mentoring in the South African context, specifically focusing on the Rachel's Angels youth mentoring programme. However, the question as to why such mentorships are needed in the community in which Rachel's Angels operates, as well as the wider South African context, is yet to be answered.

South African education has a turbulent history marked by racial segregation, poor quality schooling and unequal opportunities provided to learners. The Apartheid regime severely set back equal education opportunities by instituting decrees such as the Bantu Education Act of 1953 – which stipulates that schooling for non-white pupils will be reduced in quality and quantity compared to their white counterparts (Clark & Worger, 2004). The Act resulted in unqualified teachers and an extreme reduction in the amount of government spending it schools amongst the black population. During the 1970's the per capita governmental spending on black education was one-tenth of the spending on white (Clark & Worger, 2004). The socio-economic outcome of the unequal education resulted in a population that faced extreme poverty and a lack of education and opportunities.

The Apartheid regime came to a fall with the first democratic election in South Africa in 1994. The racially biased education decrees were first made unconstitutional by the Interim Constitution of 1994, and were then formally repealed by the South African Schools Act of 1996. In addition, every South African was granted the right to basic education as stipulated in the Bill of Rights in the newly formulated Constitution of 1996.

With these legal transformations in place, South Africa was set on the brink of educational reform in order to provide quality education to every citizen, as the 1999 Minister for Education, Kader Asmal stated: "We have created a set of policies and laws in education and training that are at least equal to the best in the world" (Jansen, 2002). However, eighteen

years after the South African Schools Act was passed South Africa is still facing several extreme problems and challenges in education.

The first major issue in South African education is the lingering problem of inequality in educational opportunity. There is a definitive difference in the performance of learners in affluent areas as compared to their counterparts in previously disadvantaged areas (Carter & Reardon, 2014). Furthermore, Spaull (2013) found a definitive correlation between poor performance in school and a disadvantaged background – resulting in the fact that there is no such thing as the 'average' South African pupil, as normal distribution of performance between the top 25% of wealthiest schools and the lower 75% of poorer schools differ to such an extent that they are not comparable (Spaull, 2013). Thus, learners attending the top 25% of schools will be privileged with greater school performance, access to educational resources and all-round greater opportunities for further advancement in life than their poorer counterparts.

In addition to inequality in education, another major problem is the ineffectiveness of education. South Africa spends the biggest share of its gross domestic product on education in Africa, with the equivalent of $1225 spent per child on primary education, compared to $258 per child in Kenya or $100 per child in Zimbabwe (Overview: Education and Adolescent Development, 2012). Yet, both Kenya and Zimbabwe continuously outrank South Africa in terms of quality of education and learner results (Global Competitiveness Report, 2014). Indeed, South African school learners continuously perform poorly compared to their international counterparts as indicated in the Global Competitiveness Report (2014), where South Africa was ranked 146th out of 148 countries in quality of education, and ranked dead last in science and mathematics. Thus, South African education can be seen as a high-cost, low performance system that compares poorly to other African nations.

The premise that South African education is severely ineffectual is not accepted by all parties. Shortly after the World Economic Forum published their findings the Department of Basic Education dismissed the report, stating that it was not an accurate reflection of the state of education (Phakathi, 2014). Other parties were quick to point out that the rankings were based purely on the opinion of a group of executives and not on any standardised measure (Spaull, 2014; Wilkinson, 2014).

In addition, there are several aspects of South African education that has continuously shown improvement. The literacy rate of the country has increased by 4.6% in the period between

1995 and 2013, in addition to the increase of the matric pass rate from as low as 55.2% during the 1995 to 78.2% in 2013 (Dwane, 2015).

The increase in the literacy rate, while laudable, is still lagging behind other comparable developing countries (SA Lagging Behind, 2012). In addition, the validity of the continuous improvement of the matric pass rate has, however, been doubted by several authors (John, 2014; Maluleke, 2014). The matric pass rate has even been deemed "deceptive as the state of education still remains a constant challenge" by experts such as Professor Jonathan Jansen, rector of the University of the Free State (Eliseev & Ngobeni, 2014).

Nonetheless, whether or not one accepts the World Economic Forum reports or the credibility of the National Senior Certificate pass rate, the National Retention Rate of 45.69% cannot be debated. In 2002 there were 1 261 827 pupils enrolled in public schools in South Africa, however only 576 490 registered for matric in 2013 (Dwane, 2015). The remaining 685 337 learners who have no matric qualification and who've never completed their formal schooling now forms part of the sub-group in South Africa with the highest level of unemployment (65%-74%), further straining the resources of the country and the economy (Bernstein, 2013). In addition, the number of learners qualifying for further study in a tertiary education institution is worrying. In 2013, only 30.6% of matric learners received university exemption, which amounts to only 13.98% of all learners who commenced their schooling in 2002 being able to continue to pursue any tertiary qualification (John, 2014).

Thus, from the above retention rates and tertiary exemption rates it is clear that assistance is needed in South African education - as these figures are unaffected by whether or not one expresses doubts over the matric pass rate or South Africa's education ranking according to the Global Competitiveness Report. Therefore, this author concludes that whether or not there is a fundamental fault in the education system of South Africa, assistance is needed to ensure that learners complete their education and to increase the amount of learners qualifying for tertiary education.

2.2 MENTORSHIP AS A HOLISTIC INTERVENTION

2.2.1 RACHEL'S ANGELS YOUTH MENTORSHIP PROGRAMME

In the previous section the needs of the South African children in terms of their education was determined. This author concluded that a significant need exists to provide assistance to school learners in order to ensure that they complete their schooling in the form of passing

the National Senior Certificate Exam and to increase the amount of learners who pass these exams with exemption to pursue tertiary education studies.

One form that such assistance may take is in that of a mentorship programme. As previously mentioned a mentorship consists of close relationship between two individuals, where one individual (the mentor) provides support and guidance for the other individual (the mentee), whether the support is of an academic, career, social and/or psychological nature (Rhodes *et al.*, 2005). In the context of the needs of the South African children – as outlined in the previous section – a mentorship programme would need to adress the problems of school retention and exemption for tertiary studies.

Such a mentorship programme exists in the form of Rachel's Angels. As outlined in the introduction of this research proposal, Rachel's Angels is a youth mentorship programme operating in the Western Cape, South Africa with the main objective of preparing school learners for tertiary education (About Us, 2013). This includes ensuring that learners complete their schooling and pass their final exams with exemption to enter into tertiary education studies.

Rachel's Angels can be seen as a formal mentorship programme and as such a distinction needs to be made in terms of 'natural mentorships' and formal mentorships. The relationships between Carl Jung and Sigmund Freud or between Socrates and Plato can be deemed 'natural mentorships' as they form without any formal intervention process and the mentor takes on a role that is a mix of both parental and peer relationship elements (Rhodes *et al.*, 2002). However, the social environment does not always offer youths the opportunity to form meaningful relationships with adults that can be termed a 'natural mentorship', therefore formal mentorship programmes have been devised in order to fill the void of role-models that seems to be escalating in urban areas world-wide (Rhodes *et al.*, 2002). Rachel's Angels, a non-profit organisation is an example of one such formalised mentorship programme that exists to provide school learners with positive interactions with another caring adult.

Named after Rachel Jafta, Media24 chair and economics professor at the University of Stellenbosch, Rachel's Angels is a mentoring programme geared towards improving the academic abilities and life skills of grade 11 and 12 learners with the aim of preparing the learners for success in tertiary education (Wilson, 2014).

First established in 2007, in a collaboration between the University of Stellenbosch, Media24 and Naspers, Rachel's Angels has the greater aim of improving education in the Western

Cape through the holistic mentoring of learners through their grade 11 and 12 years (About Us, 2013). Learners are sourced from disadvantaged schools in the Western Cape, while mentors comprise of senior students at the University of Stellenbosch. The program thus runs on a bi-annual basis with mentors and learners committed to the project for the whole duration of the 2 years (About Us, 2013). The project culminates in the National Certificate exam of the grade 12 learners which is the final step in their preparation for tertiary education.

The programme is centred round the idea of utilising holistic mentoring in order to prepare learners form disadvantaged backgrounds for the unfamiliar environment of tertiary education. The programme involves experiential learning, mentoring by peers, exposure to academic life and the realities of the business world in order to prepare learners (Rachel's Angels, 2013). Mentors are greatly involved in all the above activities of the programme and continuous communication between mentor and mentee is emphasised. Thus, the success of the youth programme rests greatly upon the relationship between the mentor and the mentee.

Eby *et al.* (2008) distinguishes between three types of mentorships in modern society: youth mentorship, academic mentorship and workplace mentorship. As Rachel's Angels is geared towards preparing adolescents for tertiary education (About Us, 2013), it can in some ways be perceived as an academic mentorship programme. However, as mentors in the programme are not expected to provide direct academic tutoring or assistance Rachel's Angels can rather be classified as a youth mentorship programme and as such fully adheres to the definition of said programme as defined by Rhodes *et al.* (2002, p.149): "Youth mentoring involves a relationship between a caring, supportive adult and child/adolescent with the focus on the personal, emotional, cognitive and psychological growth of the child/adolescent".

Thus, according to the literature, Rachel's Angels can be deemed a youth mentorship programme that is formally organised in order to prepare learners for tertiary studies. As the programme is centred round the idea of mentors providing assistance to mentee's, the following two sections will be devoted to clarifying the terms "mentor" and "mentee" within the context of Rachel's Angels.

2.2.2 A MENTOR WITHIN RACHEL'S ANGELS

A mentor, in the context of youth mentorship, can be defined as an experienced adult that assumes quasi-parental roles as advisors and role models for adolescents with whom they are

unrelated (Hamilton & Hamilton, 1992). In addition to this definition, the fact that the mentor is assigned according to a formal system, should also be taken into account.

In the context of Rachel's Angels, a mentor comprises of a senior university student enrolled at Stellenbosch University, who is assigned a mentee from an under-privileged high school within the Western Cape region of South Africa, as part of a formal mentorship programme (Wilson, 2014). The term "senior students" is used to describe Rachel's Angels mentors, as students are only eligible to partake in the programme from the second year that they are enrolled at the university. Mentors are selected based on a pre-prescribed criteria and selection process, which includes the use of psychometric tests (About Us, 2013).

The mentor seeks to build a close relationship with the mentee in order to assist the youth with their final two years of schooling and to prepare them for further tertiary education. The mentor commits him/herself to the programme for two years and stands to gain monetary compensation at the end of the mentoring period, should the mentor have performed successfully (About Us, 2013).

The definition of youth mentoring, provided by Hamilton and Hamilton (1992), indicates that mentors fulfil both quasi-parental roles and role-modelling roles. It is well recognised in the literature that mentors function as role-models by sharing experience, and modelling or displaying desired behaviours and outcomes (Fawcett, 2002). In the case of Rachel's Angels, university students successfully function as role-models, as they have already completed their schooling and are enrolled at a tertiary institution – both of which are central aims in the formal mentorship programme. However, it is this author's opinion that the quasi-parental roles of mentors within Rachel's Angels are limited, if not non-existent. The university students partaking in Rachel's Angels are most often still undergraduates and therefore the age difference between the mentor and mentee will at most be five years. The emphasis in the difference between the mentor and mentee, rests not upon age but rather upon experience. Therefore, Rachel's Angels mentors can be seen as role-models, but not as quasi-parents.

The crux of mentoring lies in the relationship itself (Ramani, Gruppen, & Kachur, 2006). Mentoring programmes where the mentor and mentee formed a natural mentorship without the aid of a formal programme, has been found to be more successful than its organised counterpart (Lee, Ansai, & Curtis, 2006). The less successful nature of formal programmes may perhaps be attributed to unsuccessful matching and a poor understanding of what mentoring comprises from both parties (Long, 1997).

This author does not refute the studies that indicate the superiority of natural mentorships, however, the lack of natural mentors within society creates a need for formal mentorship programmes as a form of community intervention or assistance. Adolescents partaking in the Rachel's Angels programme are enrolled at high schools in under-privileged areas, where there would exist a lack of natural mentors (DuBois & Neville, 1997). Therefore, the programme needs to be formalised in order to match mentors and mentees and to ensure that all areas of development are addressed.

Thus, a mentor within the context of this paper can be defined as: A senior student, enrolled at Stellenbosch University and partaking in the Rachel's Angels mentorship programme, who enters into a formalised relationship, marked by role-modelling, with an adolescent for the duration of two years.

2.2.3 A MENTEE WITHIN RACHEL'S ANGELS

Mentorship can be defined as a "nurturing process in which a skilled or more experienced person, serving as a role model, teaches, sponsors, encourages, counsels a less skilled or less experienced person for the purpose of promoting the latter's professional and/or personal development" (Anderson & Shannon, 1988, p. 40).

In terms of the above definition, the more experienced individual is dubbed a 'mentor', however there are some discrepancies in literature as to what term should be used to describe the less experienced individual. Terms such as mentee and protégé are used interchangeably (Fawcett, 2002; Ramani, Gruppen, & Kachur, 2006). However, upon closer inspection it appears that the term "protégé" is most often used in mentorships that occur in a professional setting (Rhodes *et al.*, 2002), as compared to the use of "mentee" when youth mentorship programmes are discussed. Therefore, this paper will use the term "mentee" when referring to the less experienced individual within the mentoring relationship.

In the context of Rachel's Angels, the mentee comprises of a high-school student that is currently enrolled in a high school for the final two years of schooling (About Us, 2013). The mentorship programme therefore occurs during the adolescents grade 11 and 12 years, with the aim of assisting these individuals in the final phase of their schooling and to prepare them for tertiary education.

Mentee selection in Rachel's Angels commences with the selection of the high schools participating in the programme. High schools are selected by the programme organisers

according to a pre-selected criteria, with the high schools participating in the programme differing at every two year cycle (Wilson, 2014). Each high-school identifies candidates with potential to pursue tertiary education, with the final selection being made by the Rachel's Angels administration staff (About Us, 2013). The selection is made according to a pre-determined criteria, which includes the use of psychometric testing (Wilson, 2014).

The mentee's participating in the programme commit for the duration of two years and enter into a close relationship with an assigned mentor (Wilson, 2014). In addition, the mentee participates in several training and development programmes presented under the banner of Rachel's Angels.

Therefore a mentee in terms of this paper is defined as: A high school student in his/her final phase of schooling, that is selected by Rachel's Angels to partake in a formalised mentorship programme with an assigned mentor, with the objectives of personal development and preparing the adolescent for tertiary education through the formation of a close, supportive relationship with a university student acting as mentor.

2.3 THE MENTORING RELATIONSHIP

In the previous section the terms 'mentor' and 'mentee' were defined within the context of Rachel's Angels, but as the success of the mentorship depends on the relationship between the two individuals it is imperative that the mentoring relationship within the context of Rachel's Angels is also defined. The following section will focus on what constitutes a successful mentoring relationship and how this is applicable within Rachel's Angels.

The recent academic interest in youth mentoring has been centred round the effectiveness and perceived benefits of such programs (DuBois, Holloway, Valentine, & Cooper, 2002; DuBois & Silverthorn, 2005; Durlak & Wells, 1997). In all of the meta-analytic reviews undertaken to date, revealed that a correlation exists between youth involvement in mentoring programmes and positive developmental outcomes. These correlations are however, modest and depend on numerous moderators (Rhodes & DuBois, 2008). In addition, Dubois *et al.* (2005) found that the most important moderator in determining the positive development of the youth in a mentoring programme is the formations of a close, enduring connection or relationship between the mentor and mentee. Therefore it is of utmost importance when reflecting on the competency profile of an ideal student mentor to take the factors that influence the formation of the relationship into account.

Rhodes *et al.* (2005) developed a integrated model depicting the relationship between mentor and mentee (see Table 2.1). The mentoring relationship depends most heavily on the mutuality, trust and empathy that develops between mentor and mentee. If the mentoring relationship is well-established, the social-emotional, cognitive and identity development of the youth participating in the programme may improve significantly (Rhodes *et al.*, 2005). There are, however several moderator variables that should also be kept in mind.

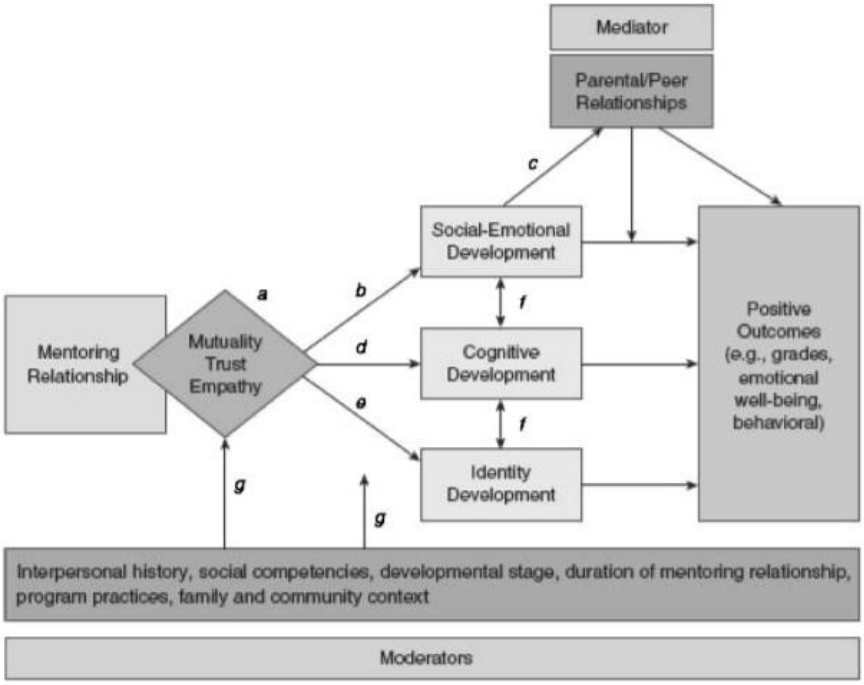


Fig. 1. Model of youth mentoring (Rhodes, 2005). Close, enduring mentoring relationships influence youth outcomes through social/emotional, cognitive, and identity development.

Figure 2.1. **Model of Youth Mentoring**. A Model of Youth Mentoring by Rhodes, J, 2005. *Handbook of Youth Mentoring,* p. 32.

The following section will discuss each of the factors of the mentoring relationship as proposed by Rhodes *et al.* (2005), focusing on the context of Rachel's Angels.

2.3.1 MUTUALITY, TRUST AND EMPATHY

Trust, the firm belief in the reliability, truth and ability of someone, lies central in the development of an effective mentoring relationship. The feeling of trust will result in the youth partaking in the programme having a perception of being understood, well-liked and respected (Rhodes *et al.*, 2005). This development of trust can be particularly difficult as it involves the forging of a close relationship between two individuals who are, in effect, strangers to one another. The development of trust hinges particularly on effective

communication – as it is through constant, reliable communication that the trust between mentee and mentor will gradually be established (Sipe, 2002).

The development of trust and mutuality is greatly dependent on the approach of the mentor. Mentors who are overly focused on achieving goals and 'transforming' their mentee set themselves up to fail – as one can overlook the individuals in the relationship when one is too focused on the specific agenda (Sipe, 2002). An effective approach would involve a mentor who first focuses on building trust with their mentee, through constant communication – thus developing real relationships by getting to know one another and becoming friends (Rhodes *et al.*, 2002). Therefore, continuous communication between mentor and mentee within Rachel's Angels should be encouraged. According to Wilson (2014), the mentoring programme emphasises communication in the mentoring relationship by having the mentors report on the monthly communication that took place between mentor and mentee.

An important aspect of the relationship that should also be kept in mind is the youth's need for 'fun'. It has already been established in the above paragraphs that the relationship between mentor and mentee should not be too goal-oriented (Rhodes *et al.*, 2005), in addition activities should be fun for the youth to participate in as it is a key part of relationship-building (Durlak & Wells, 1997) and also provides youths with opportunities that they may not be afforded by their families (VanPatten, 1997). It is therefore important for mentors to be able to partcipate in such 'fun' activities and be able to connect with the mentee at his/her emotional level. In the context of Rachel's Angels, the lack of an age gap between mentor and mentee will assist in the finding of mutual interests and activities. In addition, the numerous activites organised through the programme, such as the Market Day, ensures that an outlet is provided to have 'fun' (Wilson, 2014).

Empathy can be defined as 'intellectual identification with or various experience of feelings, thoughts, or attitudes of another' (Lahey & Waldman, 2005, p.106). Empathetic mentors are able to create trust and intimacy within the mentor-mentee relationship (Allen, 2003). In agreement with this, Rhodes *et al.* (2005) states that the presence of empathy within the mentorship relationship will increase the closeness of the relationship and in turn influence the social-emotional-, identity-, and cognitive development of the mentee. This is supported by numerous studies that indicate that empathetic relationships with adults postively influences the development of adolescents (Allen, 2003). The concept of empathy is therefore necessary in the mentoring relationships of Rachel's Angels in order to establish close, meaningful relationships.

From the above it is thus clear that trust, mutuality and empathy are central aspects in the establishment of a successful mentoring relationship within Rachel's Angels. Although these traits are encouraged by Rachel's Angels through the use of training programmes and monthly reports, it is the belief of this author that many of the aspects linked to the establishment of trust, mutuality and empathy are dependent on the mentors themselves, and not only on the actions of the formalised programme. A competency model is therefore needed to ensure that mentor with the ability to establish trust, empathy and mutuality have been selected to partake in the programme.

2.3.2 SOCIAL-EMOTIONAL DEVELOPMENT

Rhodes *et al.*'s (2005) model theorised that a well-developed relationship between the mentor and mentee - that rests upon mutuality, trust and empathy – will lead to the positive social-emotional development in the mentee.

The social development of the mentee occurs through the mentor acting as a sounding board and providing an example of effective adult communication to the mentee (Rhodes & DuBois, 2008). The communication and relationship with the mentor can therefore serve as an example of an effective relationship with other adults, and may therefore positively influence parent and peer relationships. Therefore, as also pointed out in the previous section, the communication between mentor and mentee within Rachel's Angels is of the utmost importance, and is encouraged by the programme through the monthly reports submitted by mentors.

Through this social development and establishing of a social connection, mentee's are able to better understand, express, and regulate their emotions (Rhodes, Grossman, & Resch, 2000). In context of Rachel's Angels, the fact that university students fulfilling the role of mentors are not much older than the adolescent mentee's, will most likely increase the level of understanding that mentee's are able to garner about their own emotions and behaviour.

The social and emotional developmental needs of mentee's in Rachel's Angels are currently being met through numerous training and development programmes (which include leadership training, diversity training, studying skills etc.), although it is this author's belief that some aspects of the social-emotional development may rest upon the mentee's themselves. A competency model is therefore yet again needed to ascertain that mentors are selected into the programme that will be able to encourage and support the social and emotional development of the mentor.

2.3.3 COGNITIVE DEVELOPMENT

The positive relationship between the mentor and mentee can result in the cognitive development of the mentee (Rhodes *et al.,* 2005). This hypothesis is derived from theories and highlighting the role that social support can play in the vocational and academic improvement of the youth within the mentoring relationship (Rhodes & DuBois, 2008).

Numerous research studies have been conducted in the past in an attempt to link an improvement in academic achievement to mentorship, however, results have been mixed. A longitudinal study by Torrance (1984) resulted in the conlusion that youth with mentors were more likely to achieve higher levels of schooling. Supporting the research done by McPartland and Nettles (1991) and Torrance (1984) found a statistically significant positive improvement on the grades and school attendence of youths involved in formal mentoring relationships. In addition, several other studies found small, yet statistically significant correlations between mentoring and academic achievement (Eby *et al.,* 2008; Rhodes *et al.,* 2000; Tierney *et al.,* 1995). In contrast, Slicker and Palmer (1993) found neither a difference nor an improvement on the grade average of high-school students in mentor relationships compared to the control group.

It would seem that the overall trend in research conducted to find a correlation between academic achievement and mentoring has resulted is small, yet statistically significant positive results. It is from these small correlations that a new direction in the theorising of the relationship between mentoring and academic achievement developed. Eby *et al.* (2008) and Rhodes, Grossman and Resch (2000) theorised, and found support for the hypothesis that mentoring had a small effect on academic achievement, but had a significant impact on the attitude that mentee's displayed towards school in general. These hypotheses derived from the assumption that mentors create positive changes in mentee's perceptions of relationships with adults and as such mentors fulfill the role of a role model. This function of role modelling results in cognitive and emotional benefits by conveying direct and indirect messages regarding the value of education (Hamilton & Hamilton, 1990). Thus, the mentor is responsible for a positive change in the mentee's outlook on schooling in general, resulting in the mentee placing a greater value on education.

The function of role-modelling that the mentor fulfills, implies that the mentor has to be a tangible model of success (Rhodes *et al.,* 2005). Therefore in order for a mentor to be able to change a mentee's outlook on schooling, the mentor themself has to have a positive outlook

on education and an academic history to prove it. In the instance of Rachel's Angels - where mentors are university students – academic results achieved at university level can be utilised to ensure that mentee's are tangible models of academic success and would therefore have the necessary credibility to change a mentee's perception on education in general.

Academic achievement in the mentor may also be linked to the establishment of trust in the relationship (as discussed in section 2.3.1), as Rhodes *et al.* (2002) established that a mentor needs to be a credible example of success to the mentee in order to establish a trustworthy relationship.

It is therefore imperative that academic success of Rachel's Angels mentors is confirmed for the establishment of trust in the relationship and the positive change of the mentee's perception of education to develop. The programme does currently only allow students to apply for mentors if they exceed an academic average of 65% (Wilson, 2014). Even though the literature and current activities of the mentorship programme indicates that the cognitive development of mentee's are being met through ensuring the academic capabilities of the mentors, a competency model is still needed to ensure that academic achievement is indeed a necessary competency in order to be a youth mentor.

2.3.4 IDENTITY DEVELOPMENT

The third outcome of a positive relationship between mentor and mentee, according to Rhodes *et al.* (2005), is the development of the identity of the mentee. Identity development involves a shift in mentee's current perceptions of themselves and their perception of what they can be become. These current and future identities can be viewed as the "possible selves" of the mentee – as the mentee develops a picture of what they would like to become, what they might become and what they fear becoming (Markus & Nurius, 1986). According to Darling *et al.* (2002) identity developments occurs due to the activities, resources, and educational oppertunities offered by the formal mentorship programme. Beier, Rosenfeld, Spitalny, Zansky and Bontempo (2000) found that the development the mentee's identities has a positive effect on reducing risky behaviour and improving scholastic competence.

However, the development of the mentee's current and future identities depends upon the appropriate behaviours and values as modelled by the mentor (Rhodes & DuBois, 2008). It therefore stands to reason that a mentee would be unable to develop a positive identity and reap the benefits of the mentoring programme if the mentor is engaging in behaviours that the mentorship programme attempts to prevent in mentee's.

Therefore, as Rachel's Angels is geared towards preparing school learners for success in tertiary education, it stands to reason that mentors cannot engage in below average academic achievements, as it is precisely the failure in tertiary education that the programme seeks to prevent. In the previous section it was pointed out that academic success in the mentor is needed to establish the cognitive development of the mentee and to form a trusting relationship. This section therefore supports the notion that academic success should be incorporated in the search for a competency model in order to ensure not only the cognitive development of the mentee but the identity development as well.

2.3.5 MODERATORS

The numerous moderator variables indicated by Rhodes *et al.* (2005) should be kept in mind, as no youth participating in the programme would be identical to another.

The developmental stage, programme practices and duration of the mentorship are all listed by Rhodes *et al.* (2005) as moderator variables in the mentoring relationship. However, in the context of Rachel's Angels these moderator variables are kept mostly constant. The programme has a cycle of two years with both mentor and mentee committed for the two year duration, thus duration of the mentorship does not vary and will not influence the possible competency model (About Us, 2013). The programme itself is also kept constant across the mentors and mentee's, with the same expectations being given to all parties involved, even the workshops and activities of the mentorship programme does not vary between different mentees – therefore the possible moderator is made redundant. Lastly, as all of the adolescents participating in the programme are more or less the same age, their difference in developmental stages should be negligible.

Even though some of the moderator variables pointed out by Rhodes *et al.* (2005) have been kept constant in the context of Rachel's Angels, there are several variables that may still affect the forging of a close relationship. Rhodes *et al.* (2005) listed individual history and social competencies as moderator variables. In the context of Rachel's Angels, individual history may prove to be a moderator variable as the individual histories of the mentor and mentee may differ to such a degree that it influences the establishment of communication, and by extension, trust (Long, 1997). Social competence, or rather incompetence on the part of either mentor or mentee may also stunt communication and the forging of a close bond.

In addition, Rhodes *et al.* (2005) identifies family and community context as a moderator variable. In the Rachel's Angels context this may be very applicable, as all high schools

participating in the programme may be described as “under-privileged” (Wilson, 2014). The gap between the family and community contexts that may exist between mentor and mentee may further stunt the development of mutuality and trust – both necessary for a close relationship (Rhodes *et al.*, 2005). In addition, Spencer (2007) found that socio-economic or family instability had a detrimental effect on establishing mutuality in the relationship. However, DuBois *et al.* (2002) found that youth from disadvantaged backgrounds are more likely to benefit from a mentoring relationship. Therefore it is proposed that the challenges presented by the circumstances and backgrounds of disadvantaged mentees does not necessarily form an everlasting barrier preventing an effective relationship, but can be overcome by a mentor whom exhibits the necessary traits and characteristics to persevere and to become a consistent presence in the life of the mentee.

The presence of moderator variables will need to be taken into account in the establishment of future competency models, as the moderators may affect the establishment of a close relationship between mentor and mentee. However, as the current study is the first of its kind in terms of combining youth mentorship literature and competency modelling, the author deems it prudent to first establish whether the concept of competencies and competency potentials can be reconciled with youth mentorship before embarking on an empirical search for moderating and mediating variables. The possibility of moderating variables does however create an interesting recommendation for future research.

2.4 THE CONCEPT OF COMPETENCIES

The purpose of this research paper has been stated to create a theoretical competency model for the ideal mentor participating in the Rachel’s Angels youth mentoring programme, in order to develop a Mentor Competency Questionnaire to measure the competencies of the youth mentor. However, the concept of what exactly is meant by ‘competencies’ within the context of this paper has yet to be clarified.

The first competency model involved the identification of different themes separating outstanding performers from average performance within a specific job – these themes were later organised into a set of ‘competencies’ which were reported to determine superior job performance (Mansfield, 2000). After the initial competency model in the 1970’s, numerous studies and countless competency models followed – all of whom followed the standard of describing competencies in terms of behaviourally specific terms.

Today, however, the concept of competencies follows two distinct, diverging paths. One school of thought argues that competencies can be defined as attributes that a person possesses that are causally related to success, and defines competency models as "the collection of knowledge, skills, abilities and other characteristics that are needed for effective performance in the job in question" (Campion *et al.*, 2011). This school of thought is mainly followed by academics residing in the USA.

The opposing view on competencies is that they can be seen as bundles of behaviour that are causally related to success (Theron, 2014). This school of thought, originating mostly from the UK, defines competencies as "sets of related behaviour, arising from underlying aspects of the individual which are determinants of job success" (Spangenberg, 1994). This UK school goes further to state that the behavioural constructs of job performance are causally related to the outcome performance constructs of the specific job (Theron, 2014).

In the context of this research paper, the concept of 'competencies' will be referring to the definition of "bundles of behaviour" that determine the success of a Rachel's Angels mentor. The competency model will compiled through utilising existing generic competencies dictionaries, extensive research and interviews with knowledgeable programme organisers at Rachel's Angels. In addition, the behavioural constructs of mentor performance will be linked to the outcome performance constructs of a Rachel's Angels mentor.

2.5 THE OBJECTIVES OF A MENTOR WITHIN RACHEL'S ANGELS

The purpose of this paper has been identified in the first chapter to be the compilation of a theoretical competency model for the ideal youth mentor within the context of Rachel's Angels mentorship programme. A competency model has been defined as a "single underlying construct framework that provides a rational, consistent and practical basis for the purpose of understanding people's behaviours at work and the likelihood of being able to succeed in certain roles and in certain environments" (Bartram, 2006).

According to Bartram (2006), an ideal competency model can be drawn up through the use of the Universal Competency Model. Bartram (2006) advocates the use of an evidence-based framework that rests upon three pillars: Competency Potential, Competency Requirements and Results. The results or objectives are defines as "the actual or intended outcomes of behaviour, which have been defined either explicitly or implicitly by the individual, his or her manager or the organisation" (Bartram, 2006, p. 4).

Competencies themselves have been defined as a written description of the necessary skills needed to fulfil certain objectives inherent to the job (Green, 1999). Thus the premise of establishing the competencies of a certain position (i.e. a mentor) depends highly upon the identification of the objectives inherent to the roles of the particular position. Thus, the process of acquiring a competency model for any job or position (such as that of a mentor), starts with the identification of the desired outcomes of the position within the organisation (Lucia & Lepsinger, 1999).

Thus, it is through the identification of the desired results that the possible roles and competencies associated with success in the position may be identified. Through the use of extensive interviews with administration staff of Rachel's Angels, and the interpretation of the mission and vision of the mentoring programme, the following objectives on behalf of the mentors participating in the programme was identified:

1. Ensure that the mentee achieves academic success by passing the National Senior Certificate exam at the end of his/her grade 12 year.
2. Ensure the academic future of the mentee by having the adolescent acquire an exemption pass Table on the National Senior Certificate exam – thus ensuring that the mentee is able to continue with tertiary studies.

In addition, through the use of Rhodes *et al.*'s (2005) Integrated Model of Youth Mentoring and accompanying literature, as discussed in the previous section, the following objectives has been identified as pertaining to the role of a Rachel's Angels mentor:

3. Enable and assist in the social-emotional development of the mentee through the course of the two year mentorship programme.
4. Enable and assist in the cognitive development of the mentee through the course of the two year mentorship programme.
5. Enable and assist in the identity development of the mentee through the course of the two year mentorship programme.

Thus, the above objectives can be seen as the ultimate goals for every mentor and mentee partaking in the Rachel's Angels programme. However, the objectives outlined above are rather too vague to lend itself to empirical testing and could be seen as rather more applicable to the mentee then the mentor.

Theron (personal communication, August 7, 2014) is of the opinion that the objectives of the mentor would lie within the learning competency potentials of the mentee. The ultimate

objectives as outlined above rests upon the idea that a mentee would have the necessary learning competencies to achieve said objectives. The learning competencies themselves would be interdependent on the learning competency potential of each individual mentee (Theron, personal communication, August 7, 2014). Therefore, in order to achieve the ultimate objectives of the programme, the mentor should be able to influence the learning competency potentials of the mentee – these competency potentials would then serve as the objectives that the mentor wishes to achieve.

Numerous research studies has been conducted regarding learning potential (Burger, 2012; De Goede, 2007; Prinsloo, 2013; Van Heerden, 2012). The following subsections will be devoted to discussing the possible learning competency potentials that would predict the learning competency success of the mentee and would therefore be seen as the objectives of the mentor.

2.5.1 ACADEMIC SELF-EFFICACY

The concept of self-efficacy originated within the theory of social learning and refers to an individual's opinion of their own organisational abilities regarding their behaviour in order to achieve certain outcomes (Bandura, 1977). It can therefore be seen as an individual's judgement of how well he/she would be able to plan a course of action to reach certain goals.

Academic self-efficacy in turn is defined as individual's perceptions of their learning abilities to achieve certain academic outcomes (Burger, 2012). In addition, Lackaye, Margalit, Ziv and Ziman (2006) defines *academic self-efficacy* to include the individual's perceptions of managing learning behaviour in order to achieve success in academic subjects. Prinloo (2013) added that *academic self-efficacy* is not the measure of a person's abilities, but rather the belief that the individual has regarding their abilities to achieve outcomes.

Several studies have linked the presence of *academic self-efficacy* with academic achievement (Konradt, Andresson & Ellwart, 2009; Pajares, 1996). The correlation between the individual's belief that he/she can achieve academically and actual performance within academics is therefore supported. The influence of self-efficacy is further theorised to influence the learning process itself, as Lee and Klein (2002) found positive correlations between the two concepts.

Based on the research, within the context of Rachel's Angels mentee's, it is proposed that a mentee would need possess the competency potential of *academic self-efficacy* in order to

achieve the academic specific outcomes identified in section 2.5. According to the above mentioned literature, the presence of *academic self-efficacy* within the mentee would improve the learning process as well as the academic achievement. In line with Prinsloo's (2013) definition of *academic self-efficacy*, the concept does not refer to the mentee's actual academic abilities, but rather their belief regarding these abilities. A mentee should therefore be able to believe that he/she is capable of organising their learning behaviours to such an extent that he/she would achieve academic success in the National Senior Certificate exam.

The development and positive influence of the competency potential of *academic self-efficacy* in the mentee is therefore a direct objective of the Rachel's Angels mentor.

2.5.2 LEARNING MOTIVATION

In the completion of difficult tasks, cognitive ability is seen as the greatest predictor of success (Burger, 2012; Hunter, 1986; Hunter & Hunter, 1984). Therefore in the Rachel's Angels programme, cognitive ability would be the greatest predictor of academic success for the mentee's partaking in the programme.

However, it is recently argued that the mere presence of ability is not enough to ensure success, the individual requires the necessary motivation to achieve (Burger, 2012; Prinsloo, 2013; Van Heerden, 2012). *Learning motivation* is defined as the student's willingness, desire and need to participate and be successful in the learning programme (Brewster & Fager, 2000).

Motivation to learn has been found to explain variance in performance over and above the cognitive ability of individuals (Colquitt *et al.*, 2000). More importantly, *learning motivation* has also been found to be a direct predictor of classroom academic performance in numerous studies (Kuyper *et al.*, 2000; Sing *et al.*, 2002; Wang *et al.*, 2008). The presence of a *learning motivation* is therefore required in the mentee's of Rachel's Angels in order to achieve the academic orientated objectives of the programme. The holistic, developmental objectives of the programme may also be dependent on the presence of a *learning motivation*. According to Van Heerden (2012) *learning motivation* implies the extent to which an individual directs his/her energy to the completion of a task. In the context of Rachel's Angels mentee's, this 'completion of a task' would also refer to personal development, the attendance of training and development sessions presented by the programme, and the building of a relationship with the mentor.

Therefore, the learning competency potential of *learning motivation* is required by the mentee in order to fulfill all five ultimate objectives of the Rachel's Angels programme, as outlined in section 2.5. The development and continuous influence of the *learning motivation* of the mentee, can therefore be seen as an objective that the mentor needs to achieve.

2.5.3 GRIT

In 1907, William James posed the question as to "why do some individuals accomplish more then others with equal intelligence?". Duckworth, Peterson, Matthews and Kelly (2007) responded to the question by proposing that the trait that sets individuals apart across all fields is *grit*. *Grit* is defined as a "preserverence and passion for long term goals" (Duckworth *et al.*, 2007, p.1087). *Grit* therefore implies that an individual regards long-term goals as a marathon, not as a sprint, maintaining the effort and interest in the completion of the goals over years, despite the lack of positive reinforcement or results.

The Rachel's Angels programme stretches over a two year period, and as such a commitment is required from the mentee for the duration of the two years. The competency potential of *grit* would therefore be a valuable predictor in the mentee to explain the variance in programme commitment of the mentee's. A mentee with a high level of *grit* would be more likely to participate fully in the programme for the entire duration.

Grit has also been found to correlate with achievement in various fields (Duckworth *et al.*, 2007; Duckworth & Quinn, 2009). In addition, Duckworth *et al.* (2007), found that adults with higher *grit* were more likely to have achieved higher levels of education. From this result, it can thus be proposed that *grit* can determine the variance in terms of academic achievement in individuals. The achievement of the academic objectives outlined in the ultimate objectives of the Rachel's Angels programme (see section 2.5), would therefore be dependent on some level of *grit* that is present within the mentee.

Therefore, the achievement of academic results and programme commitment of mentee's within Rachel's Angels is proposed to be positively influenced by the presence of *grit*. Some variance in the achievement of the objectives as outlined in section 2.5, will therefore be attributed to the presence of *grit* within the mentee's. In turn, the support and development of *grit* within the mentee can be seen as a direct objective of the mentor.

2.5.4 CONSCIENTIOUSNESS

Personality as a concept is defined as the characteristics of an individual that are more or less stable and that can be used to distinguish between individuals (John & Srivastava, 1999). The possibility that differences in personality may explain variance in performance, and more specifically, learning performance has been explored by numerous studies (Barrick & Mount, 1991; Bidjerano & Dai, 2007; Burger, 2012; Colquitt & Simmering, 1998; Prinsloo, 2013; Van Heerden, 2012). One such personality trait that may explain variance in mentee performance is *conscientiousness*.

Conscientiousness forms part of the Big Five personality traits as identified by Costa and McCrae (1992), and is defined as the individual's level of goal-directedness, persistance and organisation. Individual's with high levels of *conscientiousness*, are characterised as strong-willed, neat, organised and responsible (Costa & McCrae, 1992). *Conscientiousness* has been linked with academic success in numerous studies, and as such could be seen as a competency potential in mentee's wishing to achieve the academic objectives of the Rachel's Angels programme (Furnham, Monsen & Ahmetoglu, 2009; McCrae & Costa, 1999; Nijhuis, Segers & Gijselaers, 2007).

Duckworth *et al.* (2007) contends that personality as a whole contributes so little in explaining the variance in performance, that as a whole the concept may be inconsequential. This raises serious concerns for the inclusion of any personality trait as a competency potential within the competency model. However, Duckworth *et al.* (2007) continues to say that even though the statistical evidence does not support the inclusion of personality traits to describe variance in performance; the importance of the inclusion of these personality variables most likely varies according to the achievement in question. As conscientious individuals are characteristically reliable, organised, careful and self-controlled it would not be intrinsically implausible to link the characteristic with a mentee within Rachel's Angels.

A mentee within Rachel's Angels would need to exhibit the trait of *conscientiousness* in order to achieve the objectives of the programme as outlined in section 2.5. The previouly established correlations between academic achievement and *conscientiousness* lends itself to the idea that *conscientiousness* would be needed to achieve success in the National Senior Certificate exam. The behaviours of responsibility, organisation and self-control that is associated with conscientious individuals further creates the possibility that *conscientiousness* is needed within the mentee to achieve the self-development outcomes of the programme.

In turn, therefore, the support and enabling of the development of consientiouness within the mentee would be regarded as a necessary outcome for the mentor.

2.5.5 AGREEABLENESS

The concept of *agreeableness*, as with conscientiousness, is a personality trait defined as part of the Big Five personality traits by Costa and McCrae (1992). *Agreeableness* is defined as the attitude that an individual displays towards others, indivuals with this trait are characterised as peaceable, helpful and forgiving (Costa & McCrae, 1992).

As discussed in the previous section with conscientiousness, some doubt exists as to the relevance of the inclusion of personality traits in the determinants of performance (Barrick & Mount, 1991; Duckworth *et al.*, 2007). However, as with consientiousness, this author concurs with Duckworth *et al.* (2007), in that the inclusion of such a personality trait would depend on the achievement in question. The objectives of the Rachel's Angels programme would lend itself to the inclusion of *agreeableness* as a competency potential for a mentee. The reason for this being that greatest determinant of the success of a mentorship depends on the formation of a strong mentoring relationship between mentor and mentee (Rhodes *et al.*, 2005). Agreeable individuals are more likely to form and maintain positive relationships with others (Graziano & Tobin, 2009). Therefore, the success of the mentoring relationship as a whole, and by inclusion the objectives of the programme, will be influenced in some way by the presence of *agreeableness* within the mentee.

The personality trait of *agreeableness* can therefore be seen as a competency potential of a mentee within the Rachel's Angels programme, and is as such an objective that the the mentor should strive to cultivate, encourage and support within the mentee.

2.5.6 LOCUS OF CONTROL

Locus of control refers to the perception of individuals that they have control over the events and their behavioural response to events within their lives (Marks, 1998). In addition, locus of control also implies that individuals feel as if the rewards they receive in life are directly due to their behaviours and achievements (Van Heerden, 2012).

Locus of control can be viewed as a character trait that is placed on a continuum, with internal locus of control and external locus of control occupying the far ends of the continuum. Individuals who posesess an internal locus of control believe that they are

responsible for their own behaviour and as such 'masters of their own fate' (Gibson, Ivancevich, Donnelly & Konopaske, 2006). In contrast, individuals who display an external locus of control believe that the direction of their lives are out of their hands, and that they have little to no control over their behaviours, or in addition, the rewards that they receive (Gibson *et al.*, 2006). The differentiating factor with locus of control can be defined as whether the individual believes that their behaviour is intrinsically or extrinsically controlled.

It is proposed that a mentee within the Rachel's Angels programme would need to have a internal locus of control in order to achieve success with the ultimate objectives of the programme. The mentee's particpating in the programme all attend under-privileged schools, marked by poverty, violence and social degredation (Wilson, 2014). Some of these adolescents grew up in extremely poor households where everyday life was a struggle. It is therefore important that these mentee's perceive that the direction that their lives take are within their own hands. An internal locus of control will ensure that mentee's take responsibility for their behaviour and can view the programme as an opportunity to better their lives and future. An internal locus of control would therefore assist in the achievement of the developmental outcomes of the programme.

The academic outcomes of the Rachel's Angels programme may also be correlated with an internal locus of control. Several studies have show that a positive correlation exists between an internal locus of control and learning, as well as an internal locus of control and academic achievement (Anderson *et al.*, 2005; Joo *et al.*, 2011; Marks, 1998; Van Heerden, 2012). Such a correlation makes intrinsic sense, as an individual who perceives that their academic results are wholly influenced by themselves and therefore takes the responsibility to put effort into their work will achieve higher grades.

Therefore, the competency potential of an internal locus of control in mentee's should explain variance in the achievement of the objectives of the programme – and as such can be seen as an objective for the mentor to develop and nurture within the mentee.

2.6 THE COMPETENCIES REQUIRED OF A MENTOR WITHIN RACHEL'S ANGELS

Competency can be defined as bundles of behaviour that ultimately affect the performance of an individual in his/her given job (Bartram, 2005). The objective of this paper has been established to be the aim of compiling a competency model to ensure the performance of a Rachel's Angels mentor. In the following section, the specific competencies required to

perform as a Rachel's Angels mentor and to fulfil the objectives outlined in the previous section will be discussed.

2.6.1 LEADING AND DECIDING

The first possible competency that is required of a mentor, is the ability to lead. A mentor within Rachel's Angel is expected to model ideal behaviour in regards to academic achievement in order to fulfill the academic objectives outlined by the mentorship programme. In addition, the mentor is expected to guide their mentee's through their social-emotional-, cognitive- and identity development. The fulfillment of all five objectives outlined in the previous section, thus rests upon the assumption that a mentor should be competent in the role of a leader. The question as to what type of leadership is required of a mentor, remains yet unanswered.

In his assessment of political leadership, Burns (1978), identified between two dominant forms of leadership: transformational and transactional leadership. Burns (1978) identified the main differences in the types of leadership to be attributed to exchange between leaders and followers. Transformational leadership focuses on higher order intrinsic needs, with followers identifying with the needs of the leader (Judge & Piccolo, 2004). Transactional leadership was seen by Burns (1978) as a proper exchange of resources. However, Bass (1985) disagreed with Burns's (1978) postulate that transformational and transactional leadership represented two sides of a continuum, but rather stated that the two leadership styles represented two concepts entirely.

Bass and Avolio (1994) defines transformational leadership as "leadership that occurs when the leader stimulates the interest among colleagues and followers to view their work from a new perspective" (as cited in Al Noor, Uddin & Shamaly, 2011, p. 28). In extension to the definition Bass and Avolio (1994), proposed that transformational leadership comprises of four dimensions, namely: Idealised Influence, Inspirational Motivation, Intellectual Stimulation and Individualised Consideration.

Transformational leadership has been conceptualised in the business world, with numerous studies focused on the effectiveness and possible benefits of managers displaying transformational leadership (Barling *et al.*, 2000). Numerous studies have linked transformational leadership with successful mentoring in the workplace (Gentry, Weber, & Sadri, 2008; Scandura & Williams, 2004; Sosik, Godshalk, & Yammarino, 2004), however little research has been done regarding youth mentorship and transformational leadership.

The idea of transformational leadership, is that leading an individual by providing stimulation and offering new perspectives can be connected through the holistic mentoring of a youth. Holistic mentoring in itself implies that the mentor does not offer direct solutions and guidance, but rather provides the mentee with the necessary tools to succeed and improve their whole self (DuBois *et al.*, 2002). Therefore, a mentor can be thought of as an transformational leader to the youth within the mentoring relationship. The four dimensions of transformational leadership (Idealised influence, inspirational motivation, intellectual stimulation and individualised consideration) is also of relevance to the mentor leadership role. A mentor should be able to influence a mentee (but not unduly so) and provide motivation to succeed in his/her undertakings. Furthermore, contact with the mentor should provide intellectual stimulation and the mentor should be considerate to the specific individual that comprises their mentee.

This author would therefore contend that successful mentors should in some way resemble a transformational leader in their interactions with their mentee's. However, transformational leadership is not the only contender for the types of leadership that a mentor should be competent in.

Transactional leadership is defined as a style of leadership in which the leader creates compliance with his/her followers by utlising both rewards and punishments (Burns, 1978). Transactional leadership is based upon an exchange between the leader and followers and is not based upon the premise of "transforming" or changing anything – thus separating it from transformational leadership (Bass & Avolio, 1994).

The three dimensions characterising transactional leadership are contingent reward, management by exception (active) and management by exception (passive). Contingent reward refers to the degree to which the leader establishes what is expected of the follower and how met expectations will be rewarded. A Rachel's Angels mentor engages in contigent reward to some degree, as the mentor can clarify the expectations regarding the mentee's growth in certain developmental areas or the expectations regarding the mentee's academic performance.

Management by exception (active) refers to the actions that leaders undertake if they anticipate a problem (Judge & Piccolo, 2004). Active leaders anticipate problems and introduces corrective action before the problem becomes critical. Active management is relevant towards a Rachel's Angels mentor as the mentor has to be aware of the aspects of the

mentee's life, and has to be able to take action – for example, if a mentee is struggling in a specific school subject, the mentor should be aware and supportive of this turn of events before the situation becomes critical.

Management by exception (passive) refers a leader that only takes action once the problem has reached a critical point (Judge & Piccolo, 2004). To some degree this style of leadership is also applicable to mentors in the Rachel's Angels programme. Teenagers value independence and any overt forms of corrective actions on the part of the mentor may be deemed as "interfering" (Cohen, 1980). Blatant actions and interference in problem areas of the mentee's life may also hinder the positive development of social-emotional, cognitive and identity spheres (Rhodes *et al.*, 2005). Thus, to ensure that the adolescent feels sufficiently independent and continuous to improve in developmental areas, passive leadership may be utilised by mentors.

As can be seen by the above, both transformational and transactional leadership is applicable in the mentoring relationship to some degree. However, Hershey's situational leadership theory should also be considered as a form of leadership that a mentor may choose to utilise. The situational leadership theory is based upon the premise that there is no superior leadership style that should be used on all occasions, instead the theory is based on the premise that successful leaders are marked by their ability to adapt their leadership style based on the situation at hand (Schermerhorn, 1997).

Situational leadership is based on the interaction between the amount of direction a leader provides, the amount of support the leader provides and the perceived "readiness" of the followers to complete a certain objective (Hershey, 1984). The amount of directions and support given is dependent upon the amount of "readiness" perceived in the followers, as illustrated by the Situational Leadership Model below (Hershey, 1984). The situational leadership model is extremely relevant in the mentor/mentee relationship, as the leadership behaviour of the mentee tends to vary according to the experience and perceived independence of the mentee (Godshalk & Sosik, 2000).

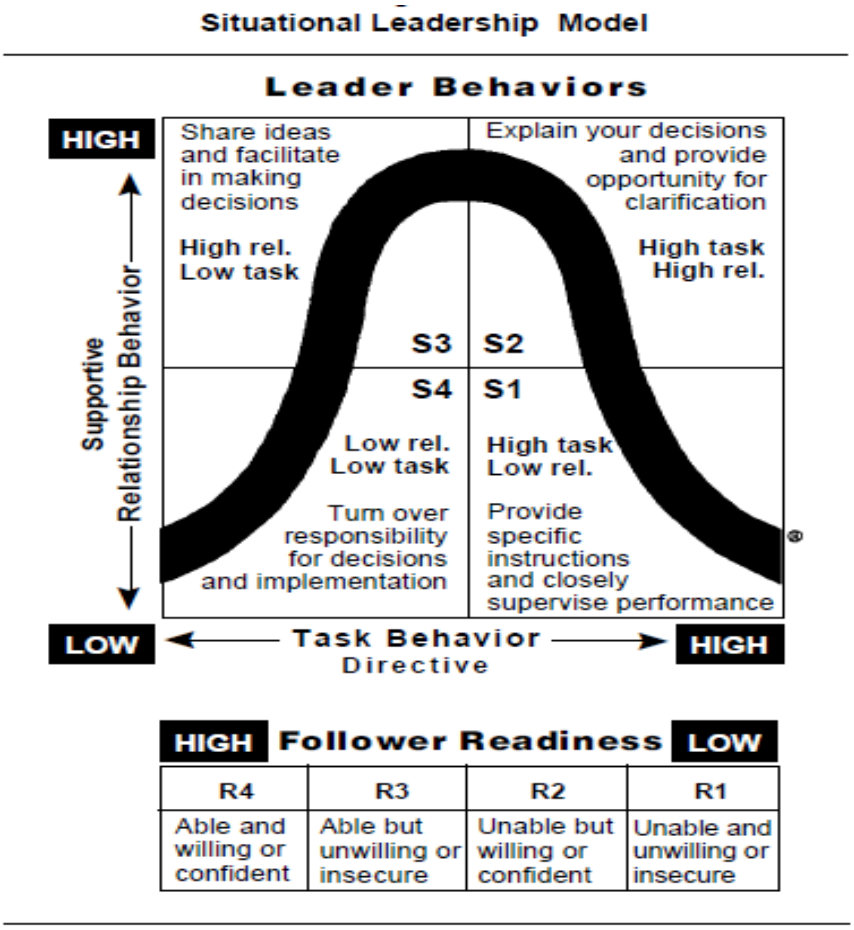


Figure 2.2. **The Situational Leadership Model.** Reprinted from *The Sitational Leader* (p. 23), by P. Hershey, 1984, California, CA: Center for Leadership Studies. Copyright 1984 by P. Hershey.

The question remains as to which type of leadership is superior within the mentoring relationship. This author contends that in the context of Rachel's Angels, Hershey's (1984) situational leadership may perhaps offer the ideal leadership alternative. Transformational leadership is in many cases too focused on "transforming" and "changing" the followers, and such a focus on change will be detrimental to the establishment of trust and mutuality in the mentoring relationship (Sipe, 2002). A mentoring relationship is an holistic intervention that creates change through support and the creation of a rapport and a relationship with the mentee. As such, transactional leadership is overly focused on results and corrective actions to be reconcilable to the concept of a holistic intervention.

In contrast to transactional and transformational leadership, situational leadership is extremely flexible, with the "readiness" of the follower dictating the actions of the leader (Hershey, 1984). In the case of a mentoring relationship, situational leadership would therefore be translated into the actions of the mentor being dictated by the perceived

"readiness", experience and knowledge of the mentee. Therefore, in the context of this paper, leadership with regards to the mentor/mentee relationship refers to the situational leadership model developed by Hershey (1984).

The premise of leadership as a competence is by no means a recent idea, as the concept is included in the Great Eight Competencies developed by Bartram (2005). The Great Eight, or the "universal competencies" were developed by Bartram *et al.* (2002) through the use of factor analysis and multi-dimensional scaling analyses. The eight competencies are purported to contain the eight most important predictors of workplace performance. The first competency identified by Bartram (2005, pg. 1187), is that of *Leading and Deciding*, which is defined as "takes control and excercises leadership. Initiates action, gives direction, and takes responsibility".

From the above literature it is clear that leadership is an important competency within the mentoring relationship and should be included in the comptency framework within this paper. However, the definition used for leading and deciding by Bartram (2005) is overly focused on leadership in organisations. The concept of 'control', while relevant in organisational leadership can be detremental to the development of the mentoring relationship. Sipe (2002) found that mentors who are too focused on control and attaining results within the mentoring relationship are less successful than their more flexible counterparts. Leadership within the mentoring relationship should take the form of a situational leader, where the direction and action provided by the mentor is dictated by the situation and by the actions of the mentee.

Therefore, the Great Eight competency of *leading and deciding* will be included in the competency model of a mentor, but has been redefined as the following:

1. *Leading and Deciding*: Excercises the appropriate level of leadership dependent on the situation. Initiates action, gives direction and takes responsibility as is deemed necessary.

In the previous section, *academic self-efficacy* was defined as an indivual's perception regarding how well they would be able to devise a course of action in order to achieve academic goals. The achievement of such academic goals and objectives form a core part of the overall objectives of the Rachel's Angels programme and as such *academic self-efficacy* is a core competency potential that a mentor should be able to develop, nurture and support.

Leadership in the context of this paper has already been established to mean situational leadership, and therefore the level of leadership that a mentor displays is proportional to the

relationship and task behaviours of the mentee. The *academic self-efficacy* of adolescents such as Rachel's Angels mentee's are in part influenced by their relationships with others – such as mentors (Schunk & Pajares, 2001). Within the context of the mentoring relationship, the mentor should therefore be able to influence and 'lead' the mentee in believing that he/she is capable of academic achievement. Situational leadership will lend itself to the fray by adjusting the amount of leadership provided to the mentee based on the perceived amount of *academic self-efficacy* present within the mentee. Therefore, it can be argued that the mentor competency of *leading and deciding* positively influences *academic self-efficacy* within the mentee.

Hypothesis 1: In the proposed mentor competency structural model it is proposed that *leading and deciding* positively influences *academic self-efficacy*.

In section 2.5.2 *learning motivation* was defined as the student's willingness, desire and need to participate and be successful in the learning programme (Brewster & Fager, 2000). The concept of leaders positively influencing the motivation of their followers has been established in the literature (Fox, 2004; Isaac, Zerbe, & Pitt, 2001; McGregor, 1966).

Fox (2004) defines motivation as the extent to which persistent effort is directed towards achieving a goal. In terms of leadership, a leader would be involved in the process of directing and influencing this 'persistant effort' in the follower, as a leader is defined as an individual that provides direction to and influences his/her followers (Fox, 2004). The behaviours of *learning motivation* (willingness, desire and need to participate) may be influenced and increased through leadership.

In the context of Rachel's Angels, where situational leadership is the proposed form of leadership present within the ideal mentor, the mentor would adapt their level of leadership depending on the levels of motivations perceived in the mentee. It is therefore proposed that the competence of *leading and deciding* in the mentor would positively influence *learning motivation* in the mentee.

Hypothesis 2: In the proposed mentor competency structural model it is proposed that *leading and deciding* positively influences *learning motivation*.

The relationship between *leading and deciding*, and *academic self-efficacy* and *learning motivation* in turn has been proposed by the above two hypotheses. In addition, a relationship between *academic self-efficacy* and *learning motivation* is suggested and supported by several research studies (Burger, 2012; Prinsloo, 2013; Van Heerden, 2012).

The reasoning behind the proposed relationship is as follows: An individual who believes that he/she has the capabilities to perform academically (*academic self-efficacy)* will in turn be more motivated to achieve academic results (Van Heerden, 2012). According to Bandura (1992), individuals who possess high levels of *academic self-efficacy* will be more likely to have a *motivation to learn* and acquire higher levels of academic achievement.

Within the context of Rachel's Angels, this would imply that a mentee who perceives that he/she has the ability to achieve good results in the National Senior Certificate exam, will be more motivated to study for the exam and will in turn, achieve higher academic results. It is therefore proposed that the learning potential of *academic self-efficacy* positively influences *learning motivation* in the Rachel's Angels mentee.

Hypothesis 3: In the proposed mentor competency structural model it is proposed that *academic self-efficacy* positively influences *learning motivation*.

2.6.2 SUPPORTING

The second competency listed in the Great Eight competencies is *supporting and cooperating*, defined as "supports other and shows respect and positive regard for them in social situations. Puts people first, working effectively with individuals and teams, clients, and staff. Behaves consistently with clear personal values that complements those of the organisation" (Bartram, 2005, p. 1187).

The definition provided by Bartram (2005) is centred round the concept of supporting within the organisation. However, the author contends that there is a competency of supporting needed within the context of the mentoring programme.

According to Rowley (1999), a good mentor is characterised by his/her ability to provide support. Psychosocial support is defined as information given to an individual that conveys the feeling of being cared for and loved, of being esteemed and valued, and the belief that the individual belongs to a network of communication and mutual obligation (Cobb, 1976). Such psychosocial support is developed through the roles of role modelling, counselling, friendship and conveying acceptance towards the mentee (Waters, 2004).

Within Rachel's Angels, the ability of the mentor to provide support for the mentee is a central function of the mentoring relationship (Wilson, 2014). As Rachel's Angels is not an academic mentorship programme, but has specific academic objectives that is meant to be achieved, the programme relies heavily upon the premise that the mentor can influence the

mentee's academic results and general development through support via a holistic intervention. Several studies has corroborated the relationship between academic achievement and the support received via a mentorship relationship (DuBois, Holloway, Valentine, & Cooper, 2002; Thompson & Kelly-Vance, 2001). The ability to support is therefore a required competence in order to achieve the academic specific outcomes of the Rachel's Angels programme.

Psychosocial support has also been linked with social-emotional and physical health in several studies (Cohen & Wills, 1985; Gottlieb, 1981, 1983; Kaplan, Cassel, & Gore, 1977; Sarason & Sarason, 1985). In addition, a study by Meeus (1992) found a significant positive correlation between the social support and the identity development of adolescents. Therefore, support as a competence may be required to complete the objective of assisting the mentee with his/her social-emotional development and identity development. The competence of 'supporting' within the mentorship relationship is therefore required to fulfill the objectives of the programme itself.

Kram and Bragar (1992) states that high-quality support within the mentoring relationship can only be achieved if there exists an understanding and mutual trust between the mentor and mentee. Support can thus be seen as a result of the mutual trust that exists within the mentoring relationship – further linking the concept of support with the concepts of trust and mutuality as mentioned in the Model of Youth Mentoring in section 2.3.1 (Rhodes *et al.*, 2005). The relationship between trust, mutuality and support provides further evidence that 'supporting' as a competence should be included in the competency model of a Rachel's Angels mentor.

Thus, the inclusion of 'support' as a competency required of a Rachel's Angels mentor has been sufficiently reinforced by the literature and reasoned thought. The competency defined as part of the Great Eight competencies (Bartram, 2005), can be adapted to the mentor competency model as the following:

2. *Supporting:* Able to provide psychosocial support when needed. Shows a positive regard for the mentee and treats him/her with respect.

Several of the competency potentials of mentee's may be linked to the mentor competency of *supporting*. The first of which is the mentee competency potential of *academic self-efficacy.* As previously stated, *academic self-efficacy* is the belief that an individual has that he/she has the necessary abilities to achieve academically.

The competency of support may be vital to the development of *academic self-efficacy*. Schunk & Pajares (2001) hypothesise that the development of *academic self-efficacy* in children and adolescents occurs through the support, guidance and reassurance given by teachers, parents and other adults. If one extends this postulate to also include mentors, it is possible that through the support and guidance provided by the mentor, the mentee will develop a belief in their own academic abilities.

When adolescents engage in academic activities they receive feedback on their academic abilites via personal and situational influences (Schunk & Pajares, 2001). Personal influences include personal goals that are set and their perception of their information processing ability. Situational influences include rewards and feedback about academic efforts and behaviours. In the context of Rachel's Angels it is possible that the mentor may influence the personal goals set by the mentee as well as provide positive feedback through the competency of *supporting*. Therefore, it is proposed that in the mentor competency model, *supporting* as a mentor competency positively influences *academic self-efficacy.*

Hypothesis 4: In the proposed mentor competency structural model it is proposed that *supporting* positively influences *academic self-efficacy*.

An *internal locus of control* has been identified in the previous section as the individual's belief or perception that they are in control of their own lives and as such control their own behavioural responses towards situations. It was argued that in the context of a Rachel's Angels mentee, an *internal locus of control* can be a highly valuable competency potential, as mentee's with this trait will take responsibility for the direction of their future.

According to several authors the prevalence of a *external locus of control* is more likely in societies marked by poverty and a history of social alienation or violence (Marks, 1998; Van Heerden, 2012). The unique history of South African Apartheid also lends itself to the creation of an *external locus of control* in those groups who were formally repressed. It would therefore be likely that the Black, Indian and Coloured race groups in South Africa has an *external locus of control* and perceive their own lives to be dictated and controlled by higher powers – because it was once definitely the case.

The mentee's partaking in Rachel's Angels hail mostly from previously disadvantaged areas in the Apartheid era, and although these adolescents were born after the fact, they would still be influenced by the previous regime's control over the Black, Coloured and Indian populations (Wilson, 2014). Therefore, it is necessary to develop an *internal locus of control*

within the mentee's of Rachel's Angels in order to ensure that these adolescents truly believe that the outcomes of their lives will be determined by their own actions. This development of an *internal locus of control* may take place through the mentor displaying the competency of *supporting*.

Through the continuous support of the mentor, the mentee may develop and increase their *internal locus of control* – which will in turn influence the ultimate objectives of the programme. Therefore it is proposed that mentor competency of *supporting* positively influences the mentee competency potential of *internal locus of control*.

Hypothesis 5: In the proposed mentor competency structural model it is proposed that *supporting* positively influences *internal locus of control*.

The stability and closeness of the mentoring relationship between mentor and mentee has been found to be the single most important factor in a successful mentorship (Rhodes *et al.*, 2005). As previously stated, the personality trait of *agreeableness* within the mentee will assist in the formation of such a close relationship. *Agreeableness* refers to an individual trait that is characterised by being harmonious in relationships with other, kind, helpful and pleasant (Graziano & Tobin, 2009).

However, the mentor relationship, as any interpersonal relationship occurs in a bidirectional manner. Therefore the trait of *agreeableness* from the part of the mentee would not be enough to form a close relationship between two individuals. The mentee would require an social-emotional response from the mentor in order to create a relationship. One such response could take place in the form of supporting the mentor and cooperating with the strictures of the mentoring programme.

Adolescents develop their interpersonal skills through interaction with their peers and the adults around them (Roeser, Eccles, & Sameroff, 2000). Adolescents from disadvantaged and poverty stricken backgrounds experience a shortage of positive interactions with adults and as such develop negative interactional skills that are detrimental to their development (Masten & Coatsworth, 1998; Roeser, Eccles, & Sameroff, 2000). As the mentee's of Rachel's Angels are mostly from such disadvantaged backgrounds, they would most likely experience a shortage of interactional experiences with caring adults.

Interactions with mentors can therefore act as a model for mentee's on how to approach interactional experiences with adults. The mentor competency of *supporting* therefore lends itself to the development of interpersonal skills within the mentee. It is further hypothesised

by this author that because of the supportive interaction with the mentor, the mentee will have a more positive outlook on interpersonal interactions and relationships, which will in turn increase the *agreeableness* of the mentee. It is thus proposed that the mentor competency of *supporting* will influence the mentor competency potential of *agreeableness.*

Hypothesis 6: In the proposed mentor competency structural model it is proposed that supporting positively influences *agreeableness*.

2.6.3 INITIATING, COMMUNICATING AND INTERACTING

Open communication is the integral component in creating a close relationship with a mentee (Rhodes *et al.,* 2005). Communication involves verbal and non-verbal cues, and is directly linked to effective listening (Lee *et al.*, 2006). Lack of proper communication and communication channels has been found to be a major component in the prediction of failed mentoring relationships (Long, 1997). Communication has been found to be a major predictor of success in the establishment of trust, mutuality and empathy within the mentoring relationship (Rhodes *et al.*, 2005). This author therefore states that the competence of 'communicating' is required by a mentor in order to reach the objectives of the Rachel's Angels mentoring programme, as laid out in section 2.4.

The social development of the mentee occurs through the mentor acting as a sounding board and providing an example of effective adult communication to the mentee (Rhodes & DuBois, 2008). The communication and relationship with the mentor can therefore serve as an example of an effective relationship with other adults, and may therefore positively influence parent and peer relationships. Through this social development, mentee's are able to better understand, express, and regulate their emotions (Rhodes, Grossman, & Resch, 2000). In addition, communication can be directly linked to the identity development of the mentee within the Rachel's Angels mentoring relationship. Adolsecents' determinants of self worth is influenced by the feedback of adults around them – whether or not the feedback is positive or negative (Harter, 1988). The mentee's self-worth and identity development is thus influenced on the appraisal received from the mentor (Rhodes *et al.*, 2005). 'Communicating' as a competence in a mentor is therefore required in order to reach the objective of assisting the mentee in his/her social-emotional and identity development.

For communication to truly affect the mentoring relationship, the mentee and mentor needs to be involved in continuous interaction (Ramani, Gruppen, & Kachur, 2006). Such interaction may take the form of one-on-one meetings, via social media or telecommunications and

should be marked by the mentors exhibited a caring attitude of wanting to do more for their mentee's by respecting their mentee's viewpoint (Sipe, 2002). Effective mentors are open and flexible; and take the mentee's interests into account when spending time together (VanPatten, 1997). Youth's can be reticent in expressing what they want to do or what they want to talk about – the responsibility thus rests with the mentor to develop a relationship with the mentee and to get to know them, their interests and their worries and problems, which can only occur through continous interaction. This author therefore states that the competence of 'interacting' should be included in the competecy framework of a Rachel's Angels mentor, as it links directly with communication and the building of a close mentoring relationship.

Communication also involves initiating conversation. Mentee's may at first rebuff the efforts of the mentor to reach out and support, however, mentors should not be easily discouraged by a mentee's lack of receptivity. Several studies have highlighted the importance of consistency and persistance in the development of a good relationship (Sipe, 1996; VanPatten, 1997). Even if the youth seems reluctant to engage, the mentor should still be willing and able to commit and to be a dependable and consistent presence in the youth's life. Styles & Morrow (1992) found that mentee's often test adults to determine if they are willing to preservere in the relationship. Successful mentors within Rachel's Angels should therefore initiate contact and ensure that meetings are scheduled without waiting for the youth/mentee to take initiative. The mentoring programme also assists in this aspect a monthly "get togethers" are organised (Wilson, 2014). Literature thus supports the inclusion of 'initiating' communication as a competency within the mentorship competency model.

Thus, the competence of 'initiating, communicating and interacting' within the Rachel's Angels mentor competency model can be defined as:

3. *Initiating, Communicating and Interacting*: Attempts to build a close relationship with the mentee by iniating conversation. Interacts effectively with the mentee on a continuous basis, with all interactions marked by respect, positive affection and a mutual interest to continue communications.

As previously stated, the central aspect and success factor of the mentoring relationship is the forming of a close relationship between mentor and mentee, marked by trust, mutuality and empathy (Rhodes *et al.*, 2005). As stated above, such a relationship may only be formed through the continuous communication and interaction between the mentor and mentee.

However, personality traits of both mentor and mentee may also have an impact in the forming of the relationship and the quality of the communication occuring between the two parties.

The personality trait of *agreeableness* is concerned with maintaining positive interpersonal relations with others (Jensen-Campbell, Gleason, Adams, & Malcolm, 2003). An individual who scores higher on *agreeableness* would be more likely to value harmonious relationships, and may also have better quality relationships. Berry and Hansen (2000) found that agreeable people were more likely to score the quality of their interactions higher than less agreeable individuals and offered the explanation that perhaps agreeable individuals communicate in a different manner. Either way, literature continuously support the concept that *agreeableness* may serve as a predictor of quality interpersonal relationships (Berry & Hansen, 2000; Graziano & Tobin, 2009; Jensen-Campbell *et al.*, 2003). Literature also supports the notion that the quality of a relationship is determined, derived or causally influenced by communication (Montgomery, 1988; Sillars, Canary, & Tafoya, 2004). Therefore, this author contends that *agreeableness* within the parties in a relationship should be causally correlated with the quality of the communication between the parties. Within the context of Rachel's Angels, the literature can be interpreted to apply to the context by the fact that the *agreeableness* of the mentee will influence the mentor competency of *initiating, communicating and interacting*.

However, as all relationships occur in a bidirectional manner, it only stands to reason that perhaps continuous, high quality interactions may positively influence the *agreeableness* of the parties (Sillars, Canary, & Tafoya, 2004). As previously stated, the mentee's of Rachel's Angels are more likely to experience a lack of positive interactions with adults due to their disadvantaged backgrounds (see section 2.6.2). The mentor is therefore seen as a model of ideal behaviours and interactions, and it only stands to reason that the continuous interaction between mentor and mentee will improve the social development of the mentee (Rhodes *et al.*, 2005). This social development of the mentee, as laid out in the Model of Youth Mentoring by Rhodes *et al.* (2005), may extend so far as to improve the mentee's want for harmonious relationships.

Therefore, in the mentor competency model it is proposed that the mentee competency potential of *agreeableness* will positively influence the *initiating, communicating and interacting* competency of the mentor. In addition, it is proposed that *initiating,*

communicating and interacting on the part of the mentor will positively influence the *agreeableness* of the mentee.

Hypothesis 7: In the proposed mentor competency structural model it is proposed that *initiating, communicating and interacting* positively influences *agreeableness*.

Hypothesis 8: In the proposed mentor competency structural model it is proposed that *agreeableness* positively influences *initiating, communicating and interacting*.

2.6.4 ADAPTING AND COPING

Bartram (2005) lists 'adapting and coping' as one of the Great Eight competencies required to perform adequately in any position in an organisation. The competency of 'adapting and coping' can be defined as "adapts and responds well to change. Manages pressure effectively and copes well with setbacks" (Bartram, 2005, pg. 1187). Even though the competency described by Bartram is intended to reflect a bundle of behaviour ideal for the workplace setting, this author contends that the competency of 'adapting and coping' is needed in the ideal Rachel's Angels mentor.

Adapting is defined as becoming adjusted to new situations (Oxford Dictionary, 2007). The mentorship programme of Rachel's Angels involves the mentoring of adolescents, and as such, the development of adolescents are marked by constant change. The social-emotional development of adolescents undergo constant change that in part be attributed to changes in hormone levels and physical development (Susman *et al.*, 1985). In addition, adolescents experience constant variations in their perceptions of self, which leads to changes in their identity development (Korger, 2007; Marcia, 1980). Literature even indicates that adolescents undergo several changes with regards to their cognitive abilities (Steinberg, 2005; Yurgelun-Todd, 2007).

It would seem that the developmental area of an adolescent is in constant flux, which would affect the objectives of the Rachel's Angels programme with regards to the social-emotional, cognitive and identity development in the mentee's. The mentors should therefore be able to assist to mentee's in adapting to developmental changes. The mentors themselves should also be able to adapt the mentoring relationship with the mentee according to the developmental changes. For example, as adolescents reach their majority they strive for an increase in independence, the mentor should then be able to adapt the mentoring relationship in such a way as to give the mentee a greater perception of independence. The changes in

developmental areas may also affect the academic achievements of adolescents (Roeser, Eccles, & Sameroff, 2000). Therefore, the Rachel's Angels mentor should especially be able to adapt to developmental changes as it can affect the attainment of the academic objectives set out by the Rachel's Angels programme.

Thus, from the above paragraphs that the inclusion of the competence of 'adapting' in the mentor competency model is justified and necessary. However, the competency of coping has yet to be addressed.

Coping refers to the activity of effectively dealing with a difficult situation (Antonovsky, 1979). Within the context of mentoring, it may be more than likely that mentors would be tasked to deal with several difficult situations during the course of the mentoring relationship. Rachel's Angels mentees are sourced from under-privileged schools within the Western Cape (Wilson, 2014). Difficulties such as single-parent homes, poverty, drug abuse, unsafe sexual behaviour, teenage pregnancy, crime and violence faces adolescents in less than privileged areas in South Africa (Brook, Morojele, Pahl, & Brook, 2006; Eaton, Flisher, & Aaro, 2003; Jewkes, Vundule, Maforah, & Jordaan, 2001; Wood & Jewkes, 1997).

Such difficulties can have detrimental effects on the academic achievements of adolescents, and as such, may pose a threat to the achievement of the academic objectives of the Rachel's Angels programme (Caldas & Bankston, 1997; Lancour & Tissington, 2011). In addition, difficulties faced by adolescents may be detrimental to their social-emotional development (Roeser, Eccles, & Sameroff, 2000). The competence to 'cope' with these difficulties within the context of the mentoring relationship is therefore required of a Rachel's Angels mentor.

Thus, the competency that is needed of a successful Rachel's Angels mentor can be defined as the following:

4. *Adapting and Coping:* Adapts and responds well to change within the mentoring relationship. Manages to effectively deal with difficult situations regarding the mentee.

In the above discussion of the *adapting and coping* mentor competency it was established that mentors at Rachel's Angels may be exposed to difficult situations. Several research studies conducted have shown that quality communication may be used to assist individuals in coping with difficult situations (Dessy, 2009; Cole, Bruschi, & Tamang, 2002).

Dessy (2009) contends that communication during difficult situations are marked by conflict and hesitancy. Within the Rachel's Angels context this may very well be the case, as conflict may arise between mentors and mentee's in discussions of difficult subjects such as teenage pregnancy, alcohol or drug abuse. Such difficult situations causes stress in both parties, and a lack of functional communication skills on the part of the caregiver (or within this context: mentor) will only increase the level of stress in the parties – placing further strain on the resolvement of the problem (Dessy, 2009). Furthermore, this lack of communication skills to handle difficult situations may result in burnout.

Within the context of Rachel's Angels the literature could thus be interpreted that the *adapting and coping* competency of the mentor, which refers to the coping of difficult situations within the mentorship relationship, will be affected by the skill level of communication of the mentor. A mentor who is also an effective communicator would be more able to resolve difficult situations in the mentoring relationship through effective communication. It is therefore proposed that the mentor competency of *initiating, communicating and interacting* will positively influence the *adapting and coping* skills of the mentor.

Hypothesis 9: In the proposed mentor competency structural model it is proposed that *initiating, communicating and interacting* positively influences *adapting and coping*.

2.6.5 EMPATHETIC AND SENSITIVE

Empathy, defined within the mentoring construct can also be seen as exhibiting pro-social behaviours (Allen, 2002). Research conducted by Penner, Craiger, Fritzsche, & Friefield (1995) suggested that there are two dimensions to empathy – namely other-orientated empathy and helpfulness. In the context of the Rachel's Angels mentoring programme, this author contends empathy, under the guises of both other-orientated empathy and helpfulness, is a needed competence for a successful youth mentor.

Other-orientated empathy is defined as an orientation to feel responsible for and having a concern of the welfare of others (Penner *et al.*, 1995). Mentors that exhibit this personality trait will therefore be inherently concerned with the welfare of their mentee and feel responsible to ensure the success of the relationship. Mentors who display this competency will therefore feel responsible to ensure that the objectives laid out for the mentoring programme are met to the best of their ability – other-oriented empathy may be seen as a competence necessary to meet all five of the objectives laid out in section 2.5. Other-

orientated empathy may also assist a mentor in persevering with the programme as the high levels of responsibility associated with the trait (Allen, 2003) will result in a mentor that feels duty bound to see the programme through to the end.

The second dimension of pro-social behaviours and helpfulness, relates to an individual exhibiting altruistic tendencies (Penner *et al.*, 1995). Altruism can be defined as the disinterested and selfless concern for the well-being of others (Allen, 2003). Altruism can be referred to as a personality trait that is inherent in some individuals and studies have found that some individuals are consistently more generous, helpful and kind than others (Rushton, Chrisjohn & Fekken, 1981). Altruism may therefore be used as a predictor for a successful mentor, as Allen (2003) found that individuals with a higher level of altruism showed a greater willingness to mentor others and was in general more successful as mentors. Furthermore, altruism may also be a predictor for the amount of mentoring provided, as individuals with greater altruism made considerable time investments in the relationship than those with lower inherent levels of altruism (Allen, 2003).

Thus, from the literature support is gained for including empathy, as a bundle of behaviours, in the mentor competency model. Empathy will ensure the success of the relationship as a whole and benefit the process of meeting the objectives of the Rachel's Angels mentoring programme.

Sensitivity on the part of the mentor with regards to difficult issues may also be a necessary competence. One such type of sensitivity that a mentor would need to display, is that of being sensitive towards culture, race and ethnicity.

Culture, race and ethnicity is sometimes used as synonyms although the actual definitions differ in academia. Culture refers to the ideas, customs, and social behaviour of a particular people or society, whereas race refers to a group, especially of people, with particular similar physical characteristics, who are considered as belonging to the same type, or the fact of belonging to such a group (Stevenson, 2010). In turn, ethnicity is defined as the fact or state of belonging to a social group that has a common national or cultural tradition (Stevenson, 2010).

Race therefore refers to an individual's biological/genetic heritage, whereas culture is socially transmitted to an individual – i.e. every individual with Caucasian skin will be classified in the same race, however every Caucasian does not share the same culture. In turn, ethnicity is not the product of cultural distinction, but rather 'the articulation of cultural

distinctiveness in situations of political and/or economic competition (Ballard, 2002). It is important to note the differences between the above mentioned concepts as South Africa is a highly diverse country, comprising of four distinct races (Black, White, Coloured and Indian), and numerous cultures and ethnicities.

The study of diversity within youth mentoring relationships has come to a definitive conclusion that when mentee's are free to choose their own mentor, they instinctively select those individuals who share some sort of similarity to themselves (Allen & Eby, 2008). Youth identify seek mentors from the same racial or ethnic background – research by Santos & Reigadas (2000) also found that mentee's paired with racially similar mentors perceived their mentors to be more helpful and where overall more satisfied than mentee's paired with mentors from a different race.

Culture also plays an equally, if not more, important role in the mentor/mentee relationship. Differences in cultures affect the mentorship relationship due to the collectivistic or individualistic nature of the culture that the mentor and mentee belongs to. A collectivistic culture emphasises the large extended family and the individual's duty and loyalty to the group as a whole, whereas individualistic cultures focus on individual achievement and loyalty to the immediate family (Hofstede, 2001). According to Allen and Eby (2010), the nature of the mentee's culture may influence the help-seeking tendencies and style of interaction of the youth. In addition, culture may also influence whether or not a mentee seeks a familial bond with their mentor.

In South Africa, the concept of collectivism vs. individualism is of particular importance, as the individual cultures within the country's borders differ. White South Africans tend to sway more towards a Western perspective of individualism, with high emphasis on personal achievements, whereas Black South Africans tend to be more collectivistic in nature, especially when one regards the centrality of the concept of Ubuntu in Black South African's lives (Eaton & Louw, 2000). Ubuntu is a philosophical term that can be translated to "human-ness", with the implied definition of a bond of sharing that connects all of man-kind (Mangaliso & Damane, 2001). The implications of the differences in culture amongst South Africans creates a problem within the mentorship sphere, as mentors and mentee's from different cultures may have different expectations and orientations towards the mentorship relationship.

The obvious solution to the problems that inter-cultural differences may create, is to pair mentors and mentee's according to culture and/or race and/or ethnicity. However, this solution is in itself too simplistic to be feasible within the muti-cultural setting of South Africa. In Rachel's Angels for example, students fulfill the role of mentors and are all sourced from the University of Stellenbosch. Stellenbosch has a demographic in terms of race is 67% White and 23% Black, Coloured and Indian (Fredericks, 2013). The Rachel's Angels mentee's are sourced from disadvantaged schools in the Western Cape area and is made up of largely Coloured students (Wilson, 2014). The idea of only selecting Coloured mentors in order to meet the similarity needs of the mentee's would be highly unfeasible and would result in racial discrimination, as other students would be precluded from participating in the programme based on their race. The probability of different cultures being represented within the mentee/mentor relationship within Rachel's Angels in therefore extremely high, yet the need to establish mutuality still remains.

It is therefore imperative that mentors selected for the programme are culturally sensitive and open to change. Mentors from different cultural or racial backgrounds than their mentee's will still be a able to fulfill the function of a mentor if they are sensitive to the differences between cultures and willing to learn and adapt. A study by Spencer (2007) found that the inability to bridge the cultural gap between mentor and mentee was one of the five biggest reasons why youth mentoring relationships failed. The competence to behave sensitively in the matter of culture, race and ethnicity should therefore be seen as necessary in the ideal mentor.

Both the behaviours of acting 'empathetically and sensitively' is therefore supported by literature and reasoned thinking to be included in the competency model of the ideal Rachel's Angels mentor. The competency can be defined as:

5. *Empathetic and Sensitive:* Has a concern for the welfare of the mentee and the mentoring relationship. Sensitively addresses subjects which may cause a barrier within the mentoring relationship.

The presence of the mentor competency of *empathic and sensitive* in the mentor will have several influences on the relationship with the mentee. Rhodes *et al.* (2005) identified empathy as a key ingredient in the creation of a close mentoring relationship. The presence of empathy within the relationship will aid the development of the mentee without the

interactions becoming like therapy (Cramer & Prentice-Dunn, 2007). It therefore stands to reason that the presence of empathy in the relationship will affect the mentee to some degree.

Agreeableness has been identified within this research paper as the personality trait concerned with forming positive, harmonious interpersonal relationships with others. The trait of *agreeableness*, as with all personality traits are changeable to a certain degree (Dweck, 2009; McCrae & Costa, 1994). It is argued by Dweck (2009) that personality traits are based upon an individual's beliefs, and as such changes in beliefs may lead to changes in personality for the individual. As such, it stands to reason that the trait of *agreeableness* within the mentee's of Rachel's Angels may be subject to change if their beliefs are changed or challenged regarding interpersonal interactions with others.

Cramer (2007) viewed the empathy facet of mentorship in practice as concerning the listening to the concerns of the mentee and the building of an emotional connection. It has already been established in previous sections that mentee's at Rachel's Angel may have a negative outlook on interpersonal relations because of their disadvantaged background (Wilson, 2014). The mentor competency of *empathy and sensitivity* may therefore, challenge the belief of interpersonal interactions for the mentee and replace it with a need for positive, harmonious interactions. Thus, it is proposed that the mentor competency of *empathy and sensitivity* positively influences the mentee competency potential of *agreeableness*.

Hypothesis 10: In the proposed mentor competency model it is proposed that *empathy and sensitivity* positively influences *agreeableness.*

The concept that beliefs in the mentee may be challenged and changed through the mentor brings more possibilities in terms of the influence of *empathy and sensitivity* on other competency potentials of the mentee. One such influence that should be considered is on the *locus of* control of the mentee. It has already been established that an *internal locus of control*, that is the belief that one is the master of one's own fate, is desirable in Rachel's Angels mentee's as they strive to overcome their disadvantaged backgrounds.

Walker (1992) found that the presence of empathy within mentors can contribute significantly to the overall feelings of self-confidence of mentee's, and may influence the self-perception of mentee's. By communicating their understanding and care, mentors provide mentee's with a source of worth (Cramer *et al.*, 2007). In the context of Rachel's Angels, the competency of *empathy and sensitivity* within the mentor may therefore lead to a greater sense of self-worth and self-confidence within the mentee. These changes in

perspective in the mentee may lead to a greater *internal locus of control*, as mentee's may realise their own self-worth in determining their own directions in their future through the understanding, empathetic behaviours of the mentors. It is therefore proposed, that the mentor competency of *empathy and sensitivity* will positively influence the mentee competency potential of *internal locus of control.*

Hypothesis 11: In the proposed mentor competency model it is proposed that *empathy and sensitivity* will positively influence *internal locus of control.*

Empathy within the mentoring relationship may not only be beneficial for the development of the mentee. Several studies have indicated that the presence of empathy within a mentor, increases the willingness of the mentor to help and support others (Allen, 2003; Clifford, 1999; Mehrabian, Young & Sato, 1988). Empathy is linked with the willingness to build a connection and listen to the concerns of the mentee, and may be a predictor in the role of the mentor to offer support (Allen, 2003; Cramer *et al.*, 2007).

In the context of Rachel's Angels it would imply that the presence of empathy within the mentor may aid the mentor in providing support for the mentee, and that mentors with greater skill in expressing empathy will be able to provide better support for mentee's. It has already been established that Rachel's Angels mentors may have to broach sensitive subjects and encounter problematic situations within the mentor relationship with the mentee, such as teenage pregnancy, drug abuse, alcohol abuse, violence and crime (Wilson, 2013). The competency of *supporting* is therefore highly valued within the mentors in the programme, and as such, literature indicates that the competency of *empathy and sensitivity* may improve the ability of the mentor to give the needed support to the mentee. It is therefore proposed that the mentor competency of *empathy and sensitivity* will positively influence the mentor competency of *supporting*.

Hypothesis 12: In the proposed mentor competency model it is proposed that *empathy and sensitivity* positively influences *supporting.*

2.6.5 ROLE-MODELLING

According to the attachment theory, a child or adolescent seeks comfort and reassurance in times of distress (Bowlby, 1988). These interactions that take place during stressful times between children and the adults in their lives results in the forming of working models as to how interpersonal interactions takes a place – a norm is formulated as to how interpersonal

reactions are to take place (Rhodes, Spencer, Keller, Liang, & Noam, 2006). Although these working models are relatively stable over time, mentoring relationships may create a change in the working models of the mentee as the mentor demonstrates positive interpersonal interactions (Bowlby, 1988; Rhodes *et al.*, 2006). The changes in working models of the mentee occurs through the process of the mentor modelling ideal interpersonal relationships to the mentee. The question can therefore be raised as to what extent does a mentor also function as a role-model?

Literature remains vague as to what exactly constitutes a role-model, although the term has been frequently linked to that of a mentor (Rhodes, 2005; Gibson, 2004; Javidan *et al.*, 1995). The traditional definition of a role-model constitutes an individual that has an influential role in another person's life an that provides an example to imitate (Gibson D. E., 2004). More recent definitions within literature focuses on the cognitive processes within the relationship with a role-model (Cross & Marku, 1991; Gibson, 2004). This alternate definition sees role-models as cognitive constructs devised by the individual to create their "ideal" or "possible selves" based on their perceptions of their own developmental needs (Cross & Markus; 1991; Gibson, 2004). This concept of 'ideal or possible selves' has also been linked to mentorship, as Markus and Narius (1986) viewed mentorship as the process whereby the mentee shapes their "possible selves" - that is what they might become, what they'd like to become and what they fear becoming – during the mentoring relationship.

Role-modelling can be further linked to the changing of perceptions and the development of within mentee's (Rhodes *et al.*, 2005). Mentors promote the positive devlopmental outcomes in mentee's through feedback, the changing of perceptions and role-modelling (Rhodes & Grossman, 2002). In the Model of Youth Mentorship, Rhodes *et al.* (2005) identifies the developmental area of mentee's within the mentoring relationship as socio-emotional development, cognitive development and identity development. Each of these developmental outcomes of mentee's may be influenced through the modelling behaviour of a mentee, as the mentee's perceptions of themselves are challenged through the modelling of ideal behaviours from the mentor. The mentor thus stimulates changes within the mentee by serving as a supportive model of success.

Especially the mentee developmental area of identity development may be influenced through role-modelling, as mentee's form their "looking glass self" within the mentor relationship (Rhodes *et al.*, 2005). The "looking glass self" implies that the significant people in adolescents lives become the social mirrors that they use to judge their own behaviours and

actions. The mentors therefore become the mirror image that mentee's use to form opinions about themselves (Rhodes *et al.*, 2005). Through this function of modelling therefore, the mentor influences the identitiy development of the mentee.

The role-modelling of ideal behaviours, attitudes and interactions by a mentor may even affect other aspects of the mentee's lives outside the realm of the objectives identified by Rhodes *et al.* (2005) or Rachel's Angels. Mentorships have been found to improve the parent-child relationships of adolescents partaking in the programme, as the mentor models conflict resolution, indirectly reducing the stress of the parent child relationship and helping the mentee cope with everyday stressors (Grossman & Rhodes, 2002).

Thus, it is clear that a definite relationship exists between the concepts of role models and mentors, and in some aspects they may even be seen as synonyms. However, within the context of this paper, this author contends that role-modelling is a competency of the overall process of being mentor, as the role-modelling can clearly be linked to the developmental outcomes of the mentee's.

It has already been established in previous sections that Rachel's Angels mentee's experience a lack of positive interactions with adults and as such will experience a lack of natural role-models within their lives (Wilson, 2014). As such it is important that the Rachel's Angels mentor fulfills the role of a role model in order to adress this gap. The role-modelling of a Rachel's Angels mentor will assist in all of the developmental outcomes of the mentee as well as create possible positive outcomes for the parent-child relationship, as established through the literature above.

In the context of this paper, therefore, the competency of role-modelling is defined as:

6. *Role-Modelling:* Display positive interactional behaviours, including constructive conflict resolution, behaviours and attitudes in an attempt to affect the working models of the mentee.

The competency of role-modelling has been established in the above literature to affect and change the perceptions that mentee's have of themselves. As such, it only stands to reason that the competency would affect several competency potential areas of the mentee.

Evaluations of mentoring programmes have identified that mentoring can have positive influences on the adolescent with regards to the outcomes of adolescent development, evidence has been found for the improvement of academic achievement as self-concept of

adolescents in mentoring programmes (DuBois & Neville, 1997; Grossman & Tierney, 1998).

These changes in academic performance and self-concepts take place through the modelling behaviours of mentors. Mentors convey a message of the importance of education and serve as a tangible model of success (Rhodes, Grossman & Resch, 2000). Mentee's model their own behaviour after that of the mentor, and as such they experience improvements in their attitude towards schooling, their perceived academic competence and academic achievement (Bowman & Howard, 1985; Hamilton & Hamilton, 1990). The mentorship thus becomes a corrective experience through the role-modelling of the mentor. Within Rachel's Angels this would imply that the mentor competency of *role-modelling* will therefore affect the perceptions that the mentee has about their academic abilities, thus their *academic self-efficacy*. It is therefore proposed that the mentor competency of *role-modelling* will positively influence the mentee competency potential of *academic self-efficacy*.

Hypothesis 13: In the proposed mentor competency structural model it is proposed that *role-modelling* positively influences *academic self-efficacy*.

The influence of the mentor's competency of *role-modelling* is not restricted only to that of *academic self-effeciacy*. As the relationship between *academic self-efficacy* and *learning motivation* has previously been hypothesised, it would as such only be prudent to explore the possibility that a relationship between the mentor competency of *role-modelling* and the mentee competency potential of *learning motivation* may exist.

In the above paragraphs it has already been established that the mentor can, through role-modelling, change the perceptions of the adolescent with regards to the importance of their schooling and their perceptions of their own academic capabilities. If the concept of the "looking glass" is further extended, it would imply that the mentor is a tangible model of success to the mentee. In the context of Rachel's Angels, where university students mentor adolescents from disadvantaged backgrounds, these mentors serve as tangible models for academic success and the importance of schooling. It only stands to reason then, that the modelling of these 'academic behaviours' by the mentors will result in a change in the adolescent's beliefs about the relationship between academic achievement and future opportunities (Klaw & Rhodes, 1995; Rhodes *et al.*, 2000). It is therefore proposed that the mentor competency of *role-modelling* will have a positive influence on the mentee

competency potential of *learning motivation*, as mentee's perceive the importance of learning through the behaviours modelled by the mentor.

Hypothesis 14: In the proposed mentor competency structural model it is proposed that *role-modelling* positively influences *learning motivation*.

The above two hypotheses rests upon the assumption that *role-modelling* can be used by the mentor to change the perceptions and belief of the mentee. This belief of the power of *role-modelling* may be extended to another area of self-perception of the mentee, namely the mentee's *locus of control.*

Research has continously show that mentoring, and indeed role-modelling has the ability to change the self-concepts of mentee's (Grossman & Rhodes, 2002; Hamilton & Hamilton, 1990; Rhodes *et al.*, 2002; Rhodes *et al.*, 2005). *Locus of control*, which is defined as the perception that an individual has about the influence and control that they have over their own lives, can be categorised as a self-concept that the individual has (Prinsloo, 2013).

As such, it only stands to reason that as with *academic self-efficacy* and *learning motivation,* the mentor can affect these competency areas of the mentee by modelling the ideal behaviours or outcomes. In the context of Rachel's Angels, many of the mentors also hail from the less-than-ideal circumstances that the mentee's currently find themselves in (Wilson, 2014). These mentors therefore display the behaviours that it is important to take control of one's own future and become 'the master of one's own fate'. Through the projection of the importance of being responsible for the direction of your own life, the mentors model an *internal locus of control* to the mentee's. The mentee's may then use the example set by the mentor to change there own beliefs and self-concepts regarding the amount of control they have over their own futures. Thus, it is therefore proposed that the mentor competency of *role-modelling* positively influences the mentee competency potential of *internal locus of control.*

Hypothesis 15: In the proposed mentor competency structural model it is proposed that *role-modelling* positively influences *internal locus of control*.

The influence of the *role-modelling* of the mentor may also be extended to the relatively stable personality traits of the mentee. *Grit* has been defined in section 2.5.3 as a personality trait characterised by a "preserverence and passion for long-term goals" (Duckworth *et al.*, 2007, p.1087).

As previously discussed, although personality traits are relatively stable they may be influenced by changes in the individual's belief system or self concepts (Dweck, 2009). It has also been established in literature and discussed in previous sections that mentors may influence the belief of mentee's through creating a change in the working models of the mentee (Rhodes *et al.*, 2005). These changes in the working models occurs through the comptency of *role-modelling*.

Grit has been likened to resiliency, as the long-term goal orientation associated with *grit* requires a certain amount of resiliency within the individual (Duckworth *et al.*, 2007). Mentoring has been found to improve the resiliency of adolescents from at-risk backgrounds (Rhodes, 1994). Such improvement in resiliency may occur through the modelling of the behaviour by mentors – as it has already been established in previous paragraphs that mentors may improve the behaviours of mentee's by modelling the desired behaviours themselves.

In addition, several authors have found that adolescents in mentoring relationships place greater importance on attaining future goals (Rhodes, Grossman & Resch, 2000; Roeser, Midgley & Urdan, 1996). As the attainment of future, long-term goals is central in the personality trait of *grit*, the results of research can be extended to the proposition that improvements in mentee's *grit* may occur because of the mentoring relationship. The reason for the improvement of the mentee's *grit* can perhaps be exlained through the concept of *role-modelling*.

Thus, in the context of Rachel's Angels, the *grit* of the mentee's may be improved through the mentors modelling ideal behaviours such as resiliency and the attainment of future goals. It is therefore proposed that the mentor competency of *role-modelling* will have a positive influence on the mentee competency potential of *grit.*

Hypothesis 16: In the proposed mentor competency structural model it is proposed that *role-modelling* positively influences *grit*.

The above hypothesis of the relationship between *role-modelling* and *grit* rests largely upon the argument by Dweck (2009), that personality traits – while relatively stable – can be changed through the changes of the beliefs of the individual. Such changes of beliefs may occur in the mentoring relationship through the *role-modelling* behaviours of the mentor. If one assumes that the above hypothesis is possible, and that personality traits may be affected through the *role-modelling* behaviours of the mentor, the changes can be extended to include the personality trait of *conscientiousness.*

Conscientiousness has been identified as a mentee competency potential and is defined as the level of goal-directedness, persistance and organisation of the individual (Costa & McCrae, 1992). As argued with the above hypotheses it is entirely possible that the levels of *conscientiousness* of the mentee may be affected by the modelling of such desired behaviours by the mentor. Within Rachel's Angels, this would imply that the mentor displaying and modelling the behaviours associated with *conscientiousness* will result in an improvement of the trait within the mentee. Thus, it is proposed that the mentor competency of *role-modelling* will positively influence the mentee competency potential of *conscientiousness*.

Hypothesis 17: In the proposed mentor competency structural model it is proposed that *role-modelling* positively influences *conscientiousness.*

Conscientiousness in itself may also have an influence on the mentee competency potentials. Individuals who score highly in the trait of *conscientiousness* are characterised to be hard-working, goal-oriented, organised individuals (Prinsloo, 2013). Research regarding the effect of personality traits like *conscientiousness* on performance, have determined that such personality traits may indirectly influence performance through the moderating variable of *learning motivation* (Burger, 2012; Prinsloo, 2013; Van Heerden, 2012). The thought process behind the relationships of the variables involves the fact that a personality trait of *conscientiousness*, which would involve being hard-working and organised, would inherently influence an individual's motivation to perform well. Several research studies have found postive correlation between the variables (Burger, 2012; Colquitt & Simmering; 1998; Prinsloo, 2013; Van Heerden; 2012). Thus, in the context of Rachel's Angels this would imply that mentee's who possess the trait of *conscientiousness* would have an inherently greater motivation to perform well academically. It is therefore proposed that the mentee competency potential of *consientiousness* will positively influence *learning motivation.*

Hypothesis 18: In the proposed mentor competency structural model it is proposed that *concientiousness* positively influences *learning motivation*.

The influence of the personality trait of *conscientiousness* may be even further extended to other mentor competency potentials. Hough (1992) identified two aspects of *conscientiousness*, one pertaining to achievement and the other to dependability. The aspect of achievement-oriented behaviours have been linked to the goal-directedness of *grit*

The personality trait of *grit* has been discussed several times in the above literature, and can be defined as an pertaining to an individual characterised by a determinance to achieve long-

term goals. *Conscientiousness* as a personality trait has been described in terms of goal-oriented behaviour, although it is more directed towards short-term goal fulfillment (Darling, Hamilton, & Niego, 1994). However, a relationship between the personality trait of short-term goal-orientation and long-term goal determinism is more than possible. This author reasons that an individual high in *conscientiousness* will feel obliged to fulfill short-term goals, which as Harackiewicz *et al.* (2000) indicated, will likely lead to the fulfillment of long-term goals – especially in terms of academic achievement. Indeed, Duckworth *et al.* (2007) found with the development of their GRIT-S measure, a measurement created to measure the levels of *grit* within an individual, that their existed a strong correlation ($r < .77$) between *grit* and *conscientiousness*. Thus, it is proposed that the mentee competency potential of *conscientiousness* will positively influence the competency potential of *grit*.

Hypothesis 19: In the proposed mentor competency structural model it is proposed that *conscientiousness* positively influences *grit*.

2.7 THE PROPOSED COMPETENCY MODEL FOR A RACHEL'S ANGELS MENTOR

In accordance with the literature and conclusions derived at in section 2.6, the following competencies are proposed for a Rachel's Angels mentor:

Table 2.1

Youth Mentor Competencies for a Rachel's Angels Mentor

Competency	Definition
1. Leading and Deciding	Excercises the appropriate level of leadership dependent on the situation. Initiates action, gives direction and takes responsibility as is deemed necessary.
2. Supporting	Able to provide psychosocial support when needed. Shows a positive regard for the mentee and treats him/her with respect.
3. Initiating, Communicating and Interacting	Attempts to build a close relationship with the mentee by iniating conversation. Interacts effectively with the mentee on a continuous basis, with all interactions marked by respect, positive affection and a mutual interest to continue communications.
4. Adapting and Coping	Adapts and responds well to change within the mentoring relationship. Manages to effectively deal with difficult situations regarding the mentee.
5. Empathetic and Sensitive	Has a concern for the welfare of the mentee and the mentoring relationship. Sensitively addresses subjects which may cause a barrier within the mentoring relationship.
6. Role-Modelling	Display positive interactional behaviours, including constructive conflict resolution, behaviours and attitudes in an attempt to affect the working models of the mentee.

In accordance with the hypotheses stated in section 2 of this research study, as an integration between the mentor competencies and the mentee competency potentials, the following mentor competency model in proposed:

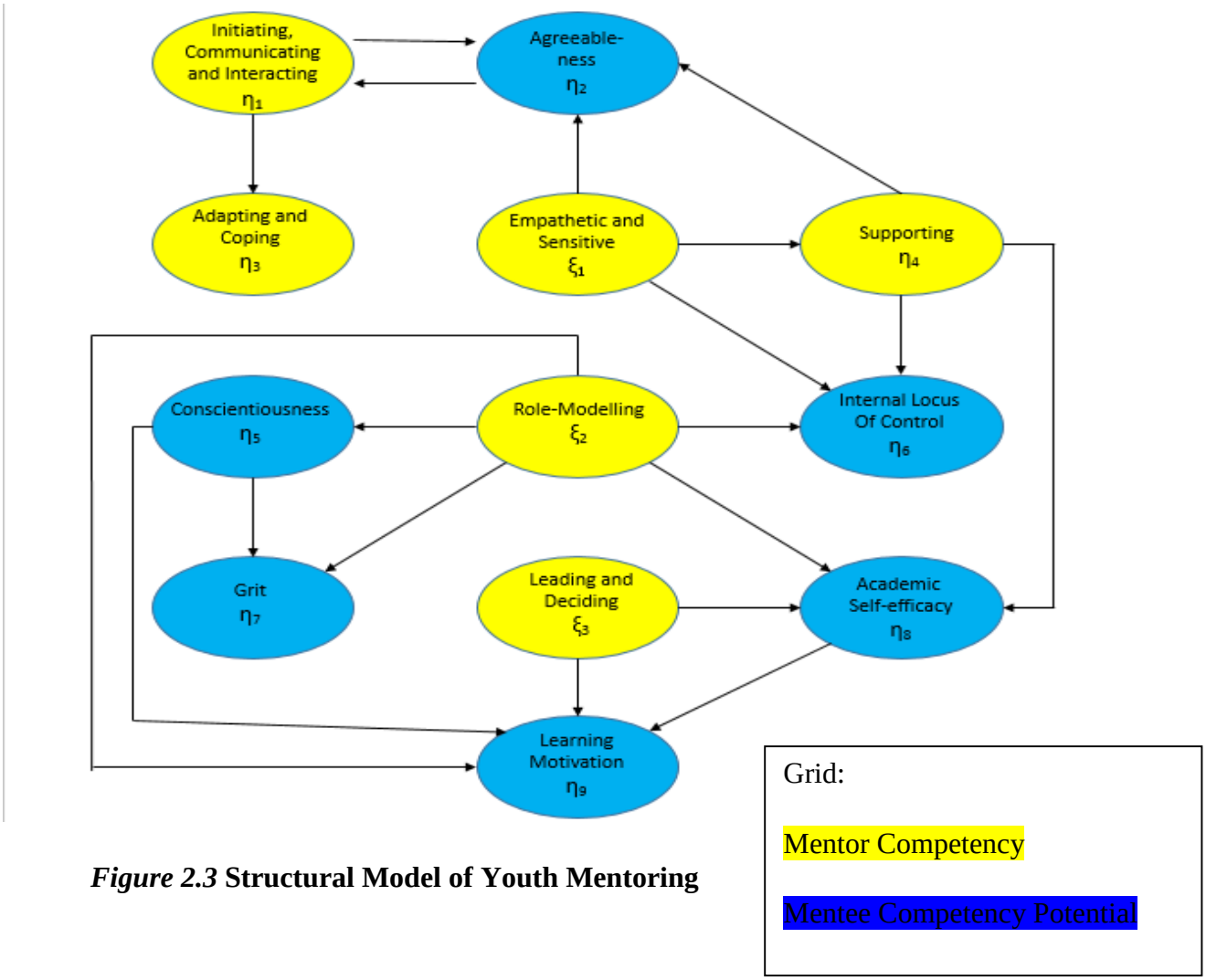


Figure 2.3 **Structural Model of Youth Mentoring**

2.8 CONCLUSION

The second chapter of this paper attempted to state the literature of concern with regards to the theoretical competency model of an ideal Rachel's Angels mentor.

It was determined that the need for affirmative development interventions such as Rachel's Angels mentorship programme is needed in order to address the social inequalities that are prevalent in the educational system of South Africa. The conclusion was drawn that youth mentorship programmes are needed to assist the development of under-privileged adolescents and provide them with the necessary opportunities to succeed in life.

The mentorship relationship was examined in detail in accordance with Rhodes' (2005) Model of Youth Mentoring. Rhodes *et al.* (2005) established that a necessary requirement for the formations of a close mentorship relationship is the development of trust, mutuality and respect. It was concluded that the Rachel's Angels programme adequately provides different mediums within the programme for these dimensions to develop. It was further found that the

programme assists in the social-emotional-, cognitive- and identity development of the mentee's in the Rachel' Angels programme.

In accordance with the Model of Youth Mentoring and interviews with the organisers of the Rachel's Angels programme, five broad objectives for mentors participating in the programme was identified. These objectives were then further analysed in order to identify the competency potentials of the mentee's within the programme. Six mentee competency potentials were identified, and it was determined that the development, nurture and support of these mentee competency potentials would be the objectives that mentors would strive for through the use of certain mentor competencies. Six mentor competencies were identified, defined and linked in a structural model with the mentee competency potentials, in order to create a overall model of the determinants of a successful mentor.

From the above literature it is clear that the success of a mentor depends on numerous factors and as such the need has arisen to statistically verify the competencies required to function as a Rachel's Angels mentor. In the Rachel's Angels mentorship programme the focus has to shift from the quantity of mentors selected to the presence of competencies in the mentors.

3. RESEARCH METHODOLOGY

3.1 INTRODUCTION

The purpose of this research paper has been established to be the development of a theoretical Mentor Competency Model for the Rachel's Angels youth mentorship programme, through combining the mentor competencies needed to develop certain mentee competency potentials within one extensive model. This theoretical model that depicts each of the mentor competencies would then be used to develop the Mentor Competency Questionnaire (MCQ). In the second chapter a mentor competency model was developed through the combination of extensive literature on competency potentials, the youth mentoring relationship and competencies as a whole.

Extensive research has been conducted regarding the relationships between variables within the learning potential sphere of knowledge (Burger, 2012; Prinsloo, 2013; Van Heerden, 2012). However, no literature could be found regarding the empirical testing of such variables within the mentoring sphere of academic literature. The competency model proposed in Chapter 2 of this study is therefore a first in the effort to uncover the nomological variables within the mentoring relationship. The ideal would of course be to test the model in its entirety, with psychometric tests to collect data on the mentee competency potentials and the MCQ to collect data on mentor competencies. However, Rachel's Angels experienced an upheaval in terms of mentor-mentee pairings in 2014, making the current group of mentor-mentee pairs unviable for the empirical testing of the Mentor Competency Model. As such, a first step was taken to explain youth mentorship in terms of Rachel's Angels within this study by developing the MCQ in order to determine if competencies can be developed and measured within the context of youth mentoring.

The aim was therefore to create the MCQ in order to measure each of the six mentor competencies identified in the literature study. The hypotheses laid out in the literature study, that comprises the structural model will therefore not be empirically tested within this study, but will rather form a basis upon which the MCQ was developed. It is however, unlikely that within this explanatory study, all of the latent variables have been identified that comprise the nomological network of interchanging variables within the youth mentoring relationship. The six mentor competencies identified does not necessarily include all competencies required to be a youth mentor, but are those deemed of most relevance by the author.

According to Prinsloo (2013) the methodology used should serve the epistemic ideal of science, i.e. the methodology should provide ample opportunity for valid conclusions to be reached in the effort to prove the validity of the Mentor Competency Questionnaire. This epistemic ideal of science is dependent on the presence of two characteristics: Objectivity and rationality (Babbie & Mouton, 2001). Objectivity refers to the active pursuit of the reduction of error and will be achieved by following certain steps within the methodology to increase the probability of reaching valid conclusions (Van Heerden, 2012). Rationality refers to maintaining the epistemic ideal of science by allowing the research findings to be evaluated by knowledgeable peers (Babbie & Mouton, 2001). However, such evaluations can only occur if the methodology of the research is described completely, including the reasoning behind all choices made within the methodological process (Van Heerden, 2012).

The following chapter will therefore be dedicated to thoroughly explaining the methodology that was utilised in the effort to prove the validity and reliability, with particular attention given to maintaining the objectivity and rationality of the research. The focus will be on explaining the research methodology that was used to develop the MCQ and to evaluate the ability of the MCQ to measure mentor competencies in the context of Rachel's Angels youth mentoring programme.

3.2 DEVELOPMENT OF THE MENTOR COMPETENCY QUESTIONNAIRE

The Mentor Competency Questionnaire measures the six mentor competencies identified in the literature study. The questionnaire was specifically based on the Rachel's Angels programme and attempted to provide a measure for the program organisers to use in order to assess the competencies of mentors.

As reiterated in the literature study, it is of utmost importance to centre all research in youth mentoring on the relationship that exists between mentor and mentee. As such, the author deemed it prudent to develop the MCQ in the form of a multi-rater assessment. The most valuable information regarding the competencies of the mentor can be given by both the mentor him/herself as well as the mentee. Therefore, the MCQ was developed in two formats: a self-assessment to be completed by the mentor and an other-assessment to be completed by the mentee.

There is however, a methodological problem regarding the use of multi-rater assessments. The MCQ data provided by both the mentor and the mentee was treated as individual data entries, in order to increase the sample size (see section 3.4 for an in depth explanation on the

problems regarding sampling). However, this treatment of data may have several implications as the observations are not independent – two raters are essentially measuring the same thing, the mentor. Therefore, there are linear dependencies in the input variables, which may result in a covariance matrix that is not positive definite (Bentler & Chou, 1987). The ideal would be to aggregate these ratings around each mentor, however in the case of the MCQ this is not practically feasible. The sample size is already compromised due to the loss of mentors in the current cycle of the Rachel's Angels programme, and as such it is not possible to only use the responses given by mentors (or to use the data aggregated around mentors) in order to empirically test the measurement model implied by the MCQ. The author is fully cognisant of the implications of such a methodological approach, however, the necessity of the study for the operations of the Rachel's Angels programme and the need for the current study to continue should be kept in mind. Rachel's Angels has only a small number of mentors and mentee's with each cycle, and if methodological rigour would be followed to the letter, such a study regarding the operations of the mentorship programme would take years to complete – far too long to make it feasible for a postgraduate research project. As mentioned previously, the methodology – as the epistemic ideal of science – is dependent on objectivity and rationality. Rationality implies that the research findings and, by implication, the methodology is examined by knowledgeable peers. After several consultations with such peers, the conclusion was drawn that even though rigour is somewhat sacrificed by the use of the multi-rater assessment, the urgency of the research findings can to some extent take precedence (Theron, personal communication, June 17, 2015; Visser, personal communication, June 19, 2015). In order to still ensure the achievement of valid conclusions, emphasis was placed on the reduction of error in an effort to achieve objectivity throughout the rest of the methodology.

Each mentor competency was measured by an essentially uni-dimensional set of items, with the same set of items used in both formats of the MCQ. The difference between the two formats were only in the pronouns used, i.e. the self-assessment MCQ was written in first-person and the mentee-assessment MCQ was written in third person. The MCQ comprises of questions in the form of statements of critical incidents that can occur in the mentor-mentee relationship, with given actions or set of behaviours that a mentor could have shown in response to the critical incident. The behavioural responses ranged from 'ideal' in the competence or 'not at all ideal', with five behavioural responses to each statement forming a 5-point Likert type scale.

The items used in the MCQ were generated in accordance with an adapted version of the critical incident technique (CIT). CIT is a methodological technique in which human behaviour is directly observed in an attempt to identify certain positive and negative aspects that contribute to a specific phenomenon. In terms of youth mentoring, a critical incident will therefore be a specific example of behaviour that the mentor/mentee has encountered during the mentoring relationship that can be linked to the concept of competencies. During the current study, the CIT took the form of story-telling with the "story" being directed by the specific competency being discussed. Interviews with previous mentors, who were deemed successful by the Rachel's Angels staff, were used to generate examples of critical incidents that have taken place in previous mentor-mentee relationships in the Rachel's Angels programme. The CIT used varied in that the competencies required to be a mentor has already been identified through extensive research of literature. The critical incident theory was therefore not used to generate competencies themselves, but to show examples of critical incidents of such competencies that may be included in the MCQ. The author therefore steered the conversation in the direction of one of the already identified competencies and encouraged 'stories' to be told by the mentors of experiences that may link to the competency at hand.

Each of the subscales that represent a mentor competency should comprise of a set of items that provides a relatively uncontaminated expression of the competency it is supposed to reflect. However, as human behaviour is complexly determined it seemed unlikely that behavioural responses stated in the MCQ will ever only reflect one single underlying variable. In order to ensure that each mentor competency is represented as purely as possible, the items in each subscale representing the competency in question should reflect the competency as well as share as little common variance in the systematic error influences as possible. The items for each subscale will therefore be unidimensional if the inter-item partial correlations between items approaches zero – whilst controlling for the common underlying factor.

The mentor and mentee version of the MCQ can be found in Appendix A and B. The marking grid for both versions of the MCQ can be found in Appendix C.

3.3 THE PROBLEM AND RESEARCH HYPOTHESES

The MCQ was developed in order to assess the competencies of youth mentors in Rachel's Angels mentoring programme. Eventually, the objective would be to test the Mentor

Competency Model through the use of the MCQ. However, the validation of the MCQ is the required before further research can take place, thus the focus of this current study was to establish credible evidence on the reliability and construct validity of the instrument.

Thus, the substantive hypothesis of this paper is that the Mentor Competency Questionnaire provides a valid and reliable measure of the six competencies required to be a Rachel's Angels mentor.

The substantive hypothesis implies the following specific operational hypothesis:

- The measurement model implied by the scoring key and the design intention of the MCQ can closely reproduce the covariance observed between the items comprising each of the subscales,
- The factor loadings of the items on their designated latent behavioural performance dimensions are significant ($p<0.05$) and large ($\lambda \geq 0.71$),
- The measurement error variance associated with each item is small,
- The latent performance dimensions explain large proportions of the variance in the items that represent them, and
- The latent performance dimensions correlate low to moderate with each other.

3.4 SAMPLING

As previously mentioned, the Mentor Competency Questionnaire is directed specifically to explaining mentor competencies in the Rachel's Angels youth mentorship programme. The participants in the research study would therefore have to be mentors and mentee's involved in the Rachel's Angels programme. The programme consists of a two-year cycle, with mentors and mentee's paired up for the duration of the two years (Wilson, 2014). New participants are selected to form part of the programme every two years, with the pairing of the mentors and mentee's being done by the programme and not the participants themselves.

The current cycle of the Rachel's Angels programme runs from 2014-2015 and consists of 128 mentors that are senior students at the University of Stellenbosch, paired with 128 mentees selected from disadvantaged schools in the Western Cape. However, the programme experienced several difficulties with the current group of mentors and as such the organisers deemed it necessary to relieve several mentors of their duties. As such the current mentor group comprises of only 68 mentors, with between two and three mentee's assigned to each mentor.

Within sampling one differentiates between the target population and the sampling population. The target population refers to the "theoretical totality of elements implied by the research initiating question" (Theron, personal communication, August 7, 2014). In contrast, the sampling population refers to the population elements from which the sample is chosen, with the difference between the target population and sample population being termed the sample gap (Theron, personal communication, August 7, 2014). The population of Rachel's Angels mentors and mentee's is very small, as the programme has only run for three full cycles, with a fourth ending in 2015. The sample that was available from this population is also quite small, with the reduction in mentor numbers in the current cycle adding another strain to sampling. As such, the sample of this study included the current mentors and mentee's participating in the programme that were able and willing to complete the MCQ.

Structural equation modelling was used in order to conduct confirmatory factor analysis of the measurement model. SEM requires large samples due to instability of co-variances that are found in small samples. Researchers seem to agree that a sample size of at least 200 participants are required to provide an effective sample for SEM (Prinsloo, 2013; Ullman, 2006). Alternatively, Hair, Black, Babin and Anderson (2010, p. 662) suggests the following in regards to sample size:

- Minimum sample size-100: Models containing five or fewer constructs, each with more than three items (observed variables), and with high item communalities (.6 or higher).
- Minimum sample size-150: Models with seven or fewer constructs, modest communalities (.5), and no underidentified constructs.
- Minimum sample size-300: Models with seven or fewer constructs, lower communalities (below.45), and/or multiple underidentified (fewer than three items) constructs.
- Minimum sample size-500: Models with large numbers of constructs, some with lower communalities, and/or having fewer than three measured items."

In addition, Bentler and Chou (cited in Kelloway, 1998, p. 20) recommend that the ratio of sample size to the number of parameters estimated should be between 5:1 and 10:1. From that basis, it can be stated that with six items representing each of the six mentor competencies, the measurement model will have 87 parameters – creating the need for 435 individuals in the sample, which is not possible given the size of Rachel's Angels and the amount of mentors and mentee's partaking in the program. Additional syntax is available by Preacher and Coffman (2006) which determines the required sample size for the test of close

fit in SEM, through the calculation of the degrees of freedom: (0.5[p+q][p+q+1]-t)= 666 – 87 = 579. The syntax was thus entered as followed:

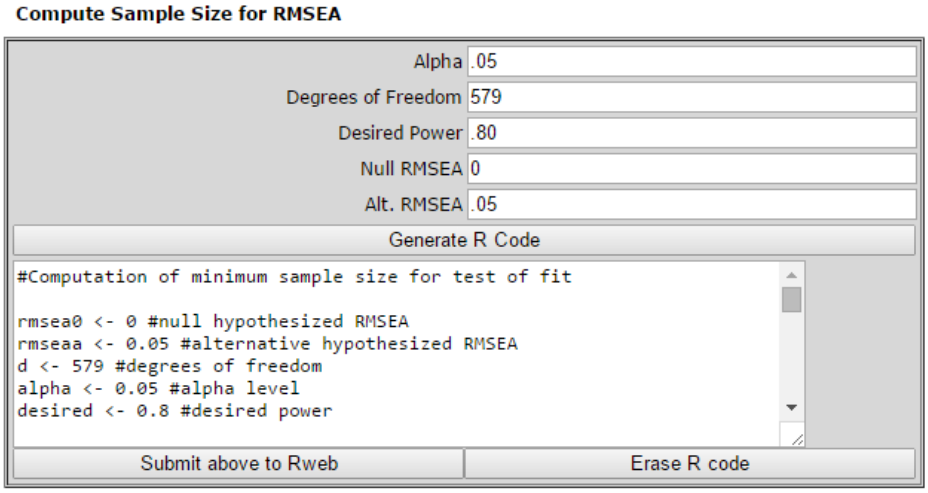


Figure 3.1: Preacher and Coffman (2006) Syntax [1].

As can be seen in Figure 3.1, the root mean square error of approximation (RMSEA) was specified at 0.05 for the close fit of the model, with Cronbach's Alpha at 0.05. The degrees of freedom were entered as 579, as calculated above. The Preacher and Coffman (2006) software indicated that a sample of 64 individuals will ensure a statistical power of .80 when testing the close fit null hypothesis.

A possibility in cases where small samples cannot be practically enlarged is to take a different approach in terms of operationalisation of the latent variables by creating item parcels. If item parcels were created in the measurement model, with two parcels representing each of the mentor competencies, the degrees of freedom can be calculated as: (0.5[p+q][p+q+1]-t)= 78 - 39 = 39. By the guidelines of Bentler and Chou (cited in Kelloway, 1998, p. 20) a sample of 195 will be needed. In addition, the syntax from Preacher and Coffman (2006), was changed to reflect the new degrees of freedom, and as such the new syntax that was entered can be seen in the following Figure 3.2:

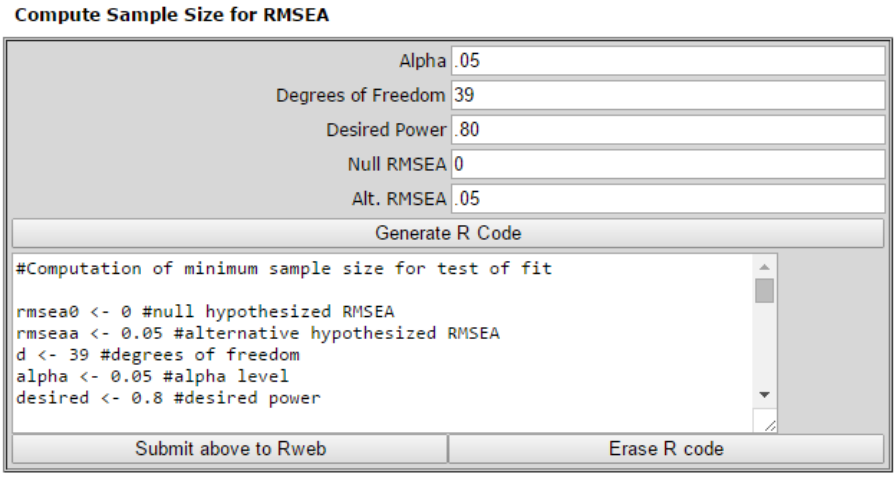


Figure 3.2: Preacher and Coffman (2006) Syntax [2]

As can be seen Figure 3.2 above, the RMSEA and alpha values were kept consistent with the Syntax [1], and the degrees of freedom were adjusted to 39 as calculated above. The syntax yields a necessary sample of 282 individuals to ensure the statistical power of .80 when testing the null fit hypothesis.

The above guidelines to sampling in terms of the MCQ could unfortunately not be fully met. Several mentors and mentee's where either unavailable or uninterested in completing the MCQ and as such only 150 complete responses were received. The demographics of the sample group can be represented as such:

Table 3.1:

Sample group demographics

	Male	**Female**	**White**	**Black**	**Coloured**	**Indian**	**Total**
Mentee's	42	80	3	8	111	0	122
Mentors	5	25	5	5	18	2	30
Total	*47*	*105*	*8*	*13*	*119*	*2*	*150*

As can be seen in Table 3.1, the sample group is slightly skewed with an over-representation of females and individuals from the Coloured race group. However, as these individuals were chosen by Rachel's Angels to take part in the programme and are a just representation of the demographics of the mentors and mentee's partaking in the programme, little can be done to further diversify the sample by the researcher.

The total sample group falls short of the Preacher & Coffman (2006) syntax advised numbers, and as such the statistical power of the research should be recalculated to reflect the

smaller sample size. Due to the less than ideal sample size, parcelling of the items are a given, and as such two parcels was used to represent each of the mentor competencies, resulting in a degrees of freedom of Df: (0.5[p+q][p+q+1]-t)= 78 - 39 = 39. The following syntax was submitted to the Preacher and Coffman (2006) software in order to calculate the statistical power:

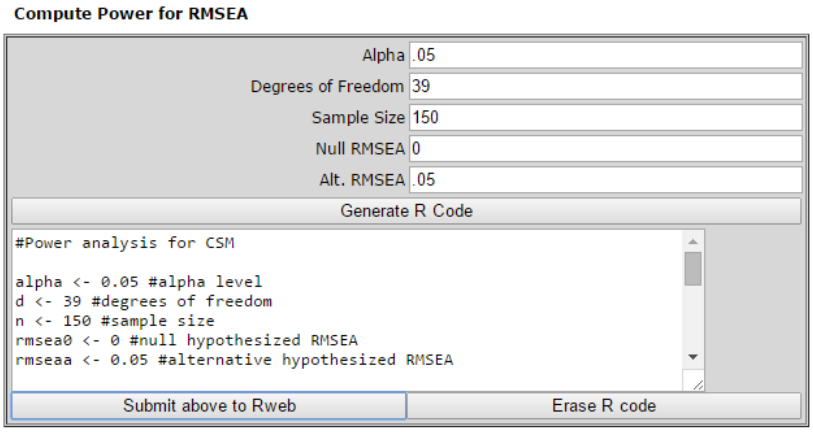


Figure 3.3: Preacher and Coffman (2006) Syntax [3]

The statistical power was calculated by Preacher and Coffman (2006) syntax to be .4371, significantly lower than the desired statistical power of 0.8. However, as there is little that can be done regarding increasing the sample size and thus the statistical power, the less than ideal result will have to be accepted. It would seem that adequate sample size is a true barrier in conducting research within applied Industrial Psychology.

3.5 RESEARCH DESIGN

An overall strategy was required in order to test the overall research hypothesis. Such a strategy is deemed a research design, which can be defined as the plan one intends to follow whilst the research is being conducted (Babbie & Mouton, 2001). In addition, Kerlinger (1973) defines the research design as the strategy of investigation that the researcher wishes to follow in the attempt to prove or disprove the hypotheses. The research design itself may also be used to control for variance – in that it maximises systematic variance, minimises error variance and controls for extraneous variance (Kerlinger, 1973; Prinsloo, 2013). Therefore, a research design in this paper was used as the blueprint of how to proceed further, as well as lend itself to ensure that valid conclusions were made with minimal error variance.

The design that would be of the best use depends on the research problem and the types of evidences required in order to answer the research initiating question (Prinsloo, 2013). The

current study did not have any path-specific structural relationships between the latent variables, although the measurement model in itself implies measurement relations between the items in the MCQ and the latent performance dimensions they are supposed to represent. Therefore, the hypotheses of the current study is not path-specific hypotheses between each of the mentor competencies, but rather that the slope of the regression of the specific indicator variables (X) on the specific latent variable (ξ), which the indicator variable is meant to represent, is positive and significantly greater than zero. In addition, Myburgh (2011) notes that the measurement model also makes assumptions regarding the co-variance between the latent variables and the co-variance between the measurement error terms. In order to test these assumptions a research design as defined above needs to be chosen, and in this study an *ex post facto* design was selected as it was deemed to be of most benefit.

An *ex post facto* design involves the empirical investigation of the relationships between variables, and the drawing of conclusions regarding the relations between the variables without any direct interventions. An *ex post facto* design is mainly utilised when the researcher does not have control over the independent variables, either because changes have already occurred and the study takes place 'after the fact' or because the variables themselves cannot be manipulated. It is within this aspect that *ex post facto* designs are differentiated from experimental designs, as the manipulation of the independent variables for the purpose of observing their influence in change in the dependent variables, is the integral core of experimental designs. *Ex post facto* and experimental designs may also be differentiated in terms of the use of randomisation, which forms a core part of experimental designs, but is unfeasible within *ex post facto*.

Within this current study regarding the MCQ it has been stated that an *ex post facto* design will be most feasible. It is precisely because of the characteristics of the design that involves variables that cannot be manipulated and subjects that cannot be randomised. Within the MCQ, independent variables comprise of competencies of mentors – which as previously discussed is meant to imply bundles of behaviour. As such, the bundles of behaviour or competencies of the mentors cannot be manipulated by the researcher as they are inherent traits to the individual. In addition, the mentorship relationships that are under scrutiny does not allow for randomisation, as the mentor/mentee group which will form the sample has already been selected and paired by the Rachel's Angels programme. Therefore, it is because of these limitations within the study that *ex post facto* remained the viable option in terms of research design.

A possible drawback of the use of an *ex post facto* design that ought to be mentioned is the risk of improper interpretation (Kerlinger, 1973). Within the design, correlations between variables does not necessarily imply causation, it depends on the researcher to utilise logical reasoning and existing literature to support the possibility of a causal relationship. As such the design is fraught with the possibility that a researcher may interpret causation where there is none. Within this study therefore, proper consideration was given to determine if true causality exists between variables.

The *ex post facto* design implies that the assumptions made by the measurement model was tested by observing the observed variables and calculating the observed inter-item co-variance matrix. The observed covariance matrix was then attempted to be recreated as closely as possible by obtaining the estimates of the freed parameters in the comprehensive LISREL model in an iterative fashion (Diamantopoulos & Sigauw, 2000). If the fitted model failed to reproduce the observed covariance matrix, it can be concluded that the measurement model does not provide an adequate explanation regarding the relationships between items in the MCQ and the mentor competencies. Van Heerden (2013) is quick to warn that the opposite finding of a fitted model that reproduces the observed covariance matrix, does not inherently imply that the psychological processes proposed by the measurement model is responsible for the production of the observed covariance matrix. If a close fit was achieved, then interpretation regarding the psychological processes was permissible, and the MCQ may be seen as a possible explanation for the phenomena regarding the competencies of a youth mentor. It should be emphasised that even with a close fit, the proposed measurement model may only be seen a one possible solution to the research initiating question.

3.6 STATISTICAL ANALYSIS

3.6.1 Item Analysis

An item analysis was required in order to ensure the internal consistency of the items in the MCQ, in other words the assumption that the items in each of the six subscales represented the underlying latent variable needed to be examined. As previously mentioned, each of the items were designed to be essentially uni-dimensional in order to reflect the variance in each of the six latent performance dimensions (mentor competencies).

The objective of the item analysis was therefore to detect any items within each of the subscales that do not reflect the intended variable (Prinsloo, 2013). Poor items can be defined

as those which cannot differentiate between the different levels of a latent variable or reversely, reflects a difference in the levels of a latent variable where none exists. Such poor items was after further reflection transformed or removed from the scale measuring the latent variable, based on the results given by the item analysis. Burger (2011) recommended that the following item statistics be considered in the decisions regarding the removal or transformation of items: the item-total correlation, the squared multiple correlation, the change in subscale reliability when item is deleted, the change in subscale variance if the item is deleted, inter-item correlations, item mean and standard deviations. It should however be noted that each of the six mentor competencies were not narrow, specific constructs but were rather broad bundles of behaviour that can be favourable for a mentor to possess. A modest loading of the items in each of the six subscales on a single factor was acceptable. However, a dimensionality analysis was still needed to verify the uni-dimensionality of each subscale that represents a competency. Myburgh (2011) noted that all items with insufficient factor loadings need not be removed, as heterogeneous subscales can be divided into two or more homogenous subscales.

3.6.2 Missing Values

The issue of missing values needed to be addressed before data analysis could commence, however the actions to be taken to address missing values could only be decided upon once the true extent of the missing were determined. Burger (2011) and Prinsloo (2013) identified several options that could be utilised to assist in the treatment of missing values:

- List-wise deletion
- Pair-wise deletion
- Imputation by matching
- Multiple imputations
- Full information maximum likelihood

List-wise deletion involves the removal of all complete cases where one or more of the values are missing (Van Heerden, 2012). Pair-wise deletion involves the deletion of cases only for analysis on variables where values are missing (Dunbar-Isaacson, 2006). Both these options are the default option in the treatment of missing items, but it may pose problems (Van Heerden, 2013). The deletion of cases will reduce the sample size and in the context of the Rachel's Angels study, where the sample size is already quite small, this could pose severe

problems. However, should the number of incomplete cases be so small that deletion would not necessarily impact the study to such an extent, deletion may be considered.

Imputation by matching involves imputing values from other cases where similar values were observed, thus missing values are substituted with real values obtained in other cases. This option may be considered the most safe and conservative in the treatment of missing values (Van Heerden, 2012). However, if no matching set of variables are available, imputation by matching cannot take place (Dunbar-Isaacson, 2006). In the research study of Rachel's Angels, where a sample of only 151 could be obtained it is more than likely that a full, matching set would not be available.

Multiple imputation involves conducting several imputations for each missing value. Each imputation creates a completed data set, "which could be analysed separately in order to obtain multiple estimates of the parameters of the model" (Dunbar-Isaacson, p.29, 2006). Within LISREL this would mean that each of the missing values are substituted with the average of the values imputed in the other cases (Du Toit & Du Toit, 2001). However, LISREL assumes that the data is missing at random and that the observed variables follows a multivariate normal distribution (Du Toit & Du Toit, 2001). This could pose a problem in the current research context as the competencies most likely do not follow a normal distribution (Van Heerden, 2012).

The final option available to treat missing data was that of full information maximum likelihood (FIML). This option involves the use of the expectation-maximisation (EM) algorithm, which calculates a likelihood function using the variables that were observed for specific cases (Smuts, 2011). The estimation of missing data results in a covariance matrix that is calculated from the imputed data, as such, further item analysis and item parcels are not possible with the FIML (Smuts, 2011; Van Heerden, 2012).

The decision made regarding missing values is elaborated in Chapter 4, as the decision was only made after the full extent of missing values and its impact on the study was determined.

3.6.3 Structural Equation Modelling

Structural equation modelling (SEM) is a statistical analysis technique that is used to test a proposed model's fit in the social sciences. The reason SEM is beneficial to use in the social sciences is because the programme is designed specifically to test complex models of explanation and prediction (Myburgh, 2011). Furthermore, SEM can determine the quality of

measurements as well as the strength of relationships between latent variables. This incorporation of path analysis and factor analysis provided insight into the measurement model implied by the MCQ.

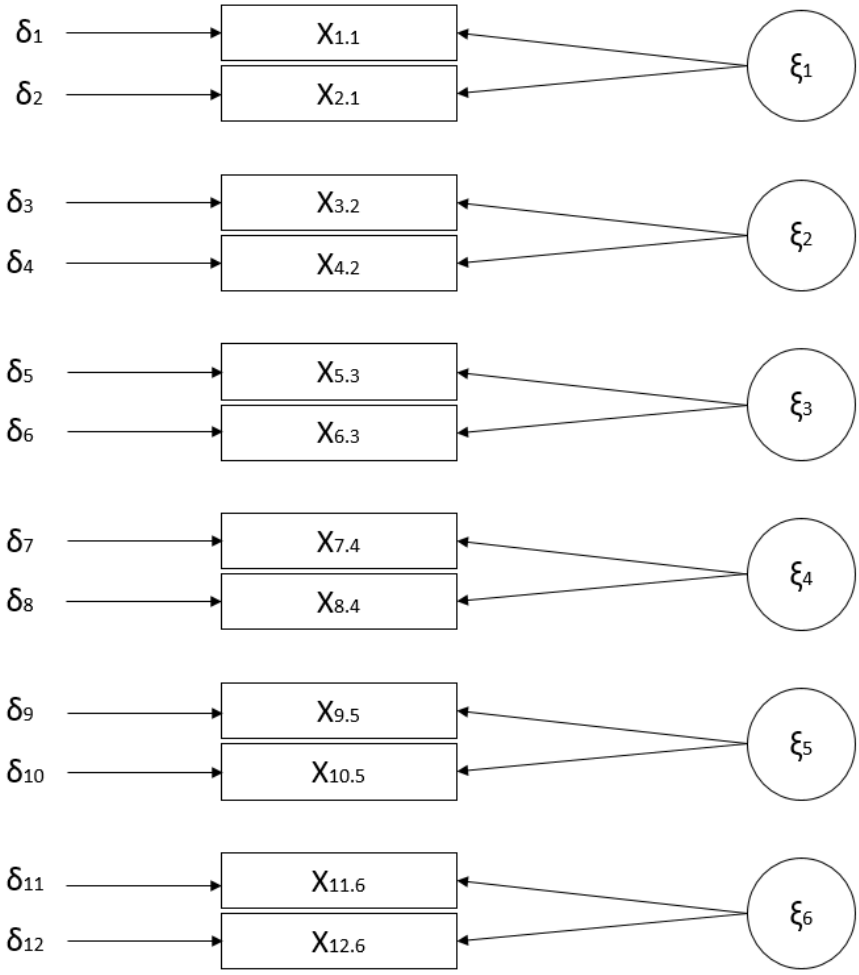
Structural equation modelling was therefore used in this study to perform confirmatory factor analysis on the observed inter-item covariance matrix of the measurement model. The confirmatory factor analysis involved the fitting of the measurement model through analysing the covariance matrix. The analysis was performed by using LISREL 8.8 (Du Toit & Du Toit, 2001), and followed the following process (Hair *et al.*, 2006):

- Model specification
- Evaluation of model identification
- Estimation of model parameters
- Testing model fit
- Model re-specification

It may be noted that the current study does not make use of exploratory factor analysis, which may be regarded as the more 'traditional' analysis technique. The reason for this deviation is that confirmatory factor analysis can be regarded as more "rigorous and more parsimonious" in validating and fitting the measurement model (Kelloway, 1998, p. 2). A validated measurement model would imply that the different indicators hypothesised to measure each of the six latent variables, does in fact do so. Furthermore, a fitted model would imply that co-variances predicted by the model parameter estimates matches the observed covariance matrix. Myburgh (2011) notes that fit of the model can be improved by using the modification indexes and other coefficients.

3.6.3.1 Model Specification

The design of the MCQ, where the responses of mentors and mentee's to the parcelled test items were hypothesised to be related to the six underlying mentor competencies can be depicted as a measurement model:



All off diagonal elements in the variance-covariance matrix φ are freed to be estimated. The six latent variables are assumed to be correlated. Only the main diagonal of the variance-covariance matrix Θδ is freed to be estimated. The measurement error terms are assumed to be uncorrelated.

Figure 3.4: MCQ Measurement Model

This measurement model can also be further defined in terms of the following measurement matrix equation:

$\mathbf{X} = \mathbf{\Lambda}^{X}\xi + \boldsymbol{\delta}$

Where:

- **X** is a 1x12 column vector of MCQ item parcels
- $\mathbf{\Lambda}^{X}$ is a 12x6 matrix of factor loadings describing the slope of the regression of $\mathbf{X}_i$ on ξ_j.
- ξ is a 1x6 column vector of latent coaching competencies ξ_j.
- $\boldsymbol{\delta}$ is a 1x12 column vector of measurement error terms δ_i.

3.6.3.2 Evaluation of Model Identification

The possibility of problems regarding model identification within LISREL ought to be discussed in terms of the measurement model. As Diamantopoulos and Sigauw (2002, p. 48) explains, "[the] problem of identification revolves around the question of whether one has

sufficient information to obtain a unique solution for the parameters to be estimated in the model. If a model is not identified, it is not possible to determine unique values for the model coefficients". Thus, if the variances and covariances within the measurement model does not provide enough information, a unique solution for the parameters to be estimated will not be found. This problem will occur if the number of independent parameters being estimated is more than the number of non-redundant elements of "S" (Diamantopoulos *et al.*, 2002). The following formula illustrates the minimum requirements for model identification:

$$t \leq s/2$$

where t = number of parameters estimated

s = the number of variances and covariances among the observable variables

p = the number of observed variables

The above equation implies that a measurement model can be unidentified ($t > s/2$), just-identified ($t = s/2$), and over-identified ($t < s/2$). An unidentified model implies that the data cannot identify unique estimates that results in identification; whereas a just-identified model implies a single solution, but zero degrees of freedom and no variance-covariance information (Myburgh, 2011). An over-identified model have more equations available than parameters to be estimated. The aim is therefore to create an over-identified model with positive degrees of freedom and variance-covariance information to test the model solution (Diamantopoulos *et al.*, 2002).

The model shown in Figure 3.3 has 39 freed model parameters that have to be estimated – as there are 12 factor loadings, 12 measurement error variances and 15 inter-latent variables to be estimated[1]. In addition, are there 78 unique variance and covariance terms in the observed covariance matrix. The degrees of freedom is therefore 39. It can therefore be concluded that the model is over-identified with a positive degrees of freedom ($t < s/2$).

3.6.3.3 Estimation of Model Parameters

3.6.3.3.1 Variable Type

As previously mentioned, the items in the MCQ was parcelled in order to overcome the constraints of a small sample that cannot by any means be enlarged. The following section

[1] The intercept of the regression of X_{ij} on ξ_j is constrained to be zero because the means of X_{ij} on ξ_j are not of interest when evaluating the construct validity of the MCQ in a single group.

will therefore discuss the advantages and disadvantages associated with this approach, in order to provide a holistic view of the approach the current study undertook.

Item parcelling is associated with numerous advantages, the important of which is that item parcels are more likely to meet the assumptions underlying maximum likelihood estimation, in that item parcels better approximate normally distributed continuous variables, required by SEM, than single items. Thus, item parcels converts ordered categorical data into continuous data (Myburgh, 2011). Additional advantages are that more reliable results are yielded by item parcels, along with lower kurtosis, lower skewness and higher validity than individual items (Dunbar-Isaacson, 2006). In addition, Myburgh (2011) reports fit-indices such as the Root Mean Square Error of Approximation (RMSEA), Comparative Fit Indices (CFI) and the Chi Square Test improves as the number of items in a parcel increases.

However, all of the advantages mentioned above comes at the cost of several disadvantages. The first of which is that only uni-dimensional structures can be tested through parcelling, as it is difficult to interpret multi-dimensional constructs in parcels. This, however, should not be a problem within the MCQ, as each of the mentor competencies were defined and developed as uni-dimensional constructs. A disadvantage that may affect the MCQ measurement model is the possibility that parcelling may create room for not rejecting a wrong model. Item parcelling can lead to an improved fit for all models as "parcel-based models cancel out random and systematic error by combining these errors and thereby improving model fit" (Myburgh, 2011, p. 68). A last possible disadvantage is that weak items can 'hide' within parcells and the specific validity and reliability of each item as a measurement of a specific mentor competency is not necessarily evaluated.

The above advantages and disadvantages provides a well-rounded view of item parcelling that was used. The implications of the disadvantages was kept in mind in the final analysis of the data and discussion of the findings, however, as the sample size places constraints on the possible methods that can be used to undertake the study, item parcelling is necessary in testing the measurement model of the MCQ. As such, two item parcels where calculated to represent each of the six latent performance dimensions.

3.6.3.3.2 Univeriate and Multivariate Normality

It is assumed by the multivariate likelihood estimation technique of LISREL, that the indicator variables used to operationalise the latent variables follow a multivariate normal distribution. This null hypothesis of a normal distribution is usually tested, if the assumption

is not satisfied normalisation is then attempted through LISREL (Jöreskrog & Sörbom, 1996b). If no such normalisation can be managed, a robust maximum likelihood estimation is ordinarily used.

3.6.3.4 Testing Model Fit

The measurement model is deemed to fit well if the reproduced covariance matrix approximates the observed covariance matrix (Burger, 2011). Thus, whether or not the model fits the data of the underlying theory. Thus, if the observed covariance matrix can be closely reproduced from the estimates obtained for the freed model parameters, the model fit the data and will provide a plausible account of the process that generated the observed covariance matrix.

Diamantopoulos & Sigauw (2000) recommends interpreting the measurement model fit in accordance with the full range of fit indices offered by LISREL 8.8. Thus, no single statistical index was used to make conclusions about model fit, rather the range of indices made available by LISREL was used.

3.6.3.5 Statistical Hypothesis

The measurement hypothesis that the measurement model provides a valid account of the process that produced the observed covariance matrix was under scrutiny (Hair *et al.*, 2006). If this hypothesis could be interpreted to mean that the measurement model will provide an exact fit the following null hypothesis would be of note:

$$H_{01}: \text{RMSEA} = 0$$

$$H_{a1}: \text{RMSEA} > 0$$

If the hypothesis would be interpreted to imply that the measurement model would only provide an approximate description of the process that resulted in the covariance matrix, the following close fit hypothesis would apply:

$$H_{02}: \text{RMSEA} \leq 0.05$$

$$H_{a2}: \text{RMSEA} > 0.05$$

If the close fit null hypothesis would not be rejected, or if the measurement model demonstrates reasonable fit, the following hypothesis will be tested in regards to the freed elements in Λ:

$H_{0i}: \lambda_{jk} = 0; i = 3, 4, \ldots 14; j = 1, 2, \ldots 12; k = 1, 2, \ldots 6$

H_{ai}: $\lambda_{jk} > 0$; i = 3, 4, … 14; j = 1, 2,… 12; k = 1, 2,… 6

If the close fit null hypothesis would not be rejected, or if the measurement model demonstrates reasonable fit, the following hypothesis will be tested in regards to the freed elements in Θ_{δ}:

H_{0i}: $\Theta_{\delta jj} = 0$; i = 15, 16, … 26; j = 1, 2,… 12

H_{ai}: $\Theta_{\delta jj} > 0$; i = 15, 16, … 26; j = 1, 2,… 12

If the close fit null hypothesis would not be rejected, or if the measurement model demonstrates reasonable fit, the following hypothesis will be tested in regards to the freed elements in ϕ:

H_{0i}: $\phi_{jk} = 0$; i = 27, 28, … 41; j = 1, 2,… 6; k = 1, 2,… 6

H_{ai}: $\phi_{jk} > 0$; i = 27, 28, … 41; j = 1, 2,… 6; k = 1, 2,… 6

3.6.3.6 Model Re-Specification

If poor model fit is found in the expected model, some modifications may be made to improve model fit. Researchers should, however, approach such modifications with caution, as the changes must reflect the underlying theory. Thus, changes cannot be made just to improve the model superficially whilst changes made are not in line with the theory discussed in the literature study.

A first step would be to individually examine the fit of each construct, its item parcels and the individual items within those parcels. Myburgh (2012) advocates that parcels with a multiple $R^2 < .2$ be removed, as this reflects a high level of error. In addition, the discriminant validity of each of the six constructs ought to be examined in terms of the phi value. Should a high phi value be achieved between two constructs it would imply that the two constructs are in essence measuring the same thing. In addition to examining just the phi value, it is also possible to determine whether or not constructs differ significantly from each other by examining the confidence interval as follows (Bagozzi, Yi & Phillips, 1991):

Phi value ± 1.96 standard error

According to Myburgh (2012), if this confidence interval includes the value 1.0, the discriminant validity is not sufficient and further evaluations in terms of the cross-loading ought to be made.

3.8 CONCLUSION

The research project attempted to validate the Mentor Competency Questionnaire through the exact and close fit null hypotheses. This chapter focused on analysing the exact procedure and methodology that was followed in the research project, with particular attention paid to sampling, research design and the methods used in structural equation modelling in order to test the measurement model implied by the MCQ. In addition, the analysis of future data was examined through regarding the particulars of LISREL 8.8.

Several problematic areas within the proposed study was identified, however none were deemed serious enough to impede the success of the study entirely. However, as the current study is the first of its kind within the scope of youth mentorship, such problems within the maiden research is not unexpected.

4. RESEARCH RESULTS

4.1 INTRODUCTION

The results of the data analysis described in Chapter 3 will be presented in the following section. In Chapter 3 a measurement model was proposed (Figure 3.4) that implies a relationship between specific indicator variables and performance variables. In addition, it is assumed that the items within each subscale reflects the underlying competency that it wishes to measure[2]. The measurement model therefore implies two overall statistical hypotheses regarding overall model fit as well as 12 specific statistical hypotheses on the significance of the freed factor loadings in factor loading matrix. The following chapter will therefore examine each of these hypotheses in order to come to a valid conclusion regarding the measurement model.

4.2 MISSING VALUES

As described in section 3.6.3, there are several possible methods to deal with data sets with incomplete responses, which are (Mels, 2003):

- List-wise deletion of cases
- Pair-wise deletion of cases
- Imputation by matching
- Multiple Imputation (MI)
- Full Information Maximum Likelihood estimation (FIML)

The sample group of 153 entries only contained two data sets with incomplete responses. As the number of incomplete entries is such a small amount, the decision was made to use list-wise deletion of cases – the most popular of methods in dealing with missing values. Therefore, the two incomplete data sets were removed from the sample group, thus creating a sample group of n = 151. List-wise deletion has been criticized for its tendency to dramatically reduce the sample size (Myburgh, 2012). Although this is not the case in the current sample with the deletion of only two cases.

[2] It should be noted that items are paired into item parcels within the measurement model.

4.3 ITEM ANALYSIS

The measurement model (Figure 3.4) reflects that the MCQ intends to measure the 6 latent variables that each represents a mentor competency. Six items are used to measure each competency, and are paired in item parcels. The ideal would be for respondents to respond to each of the items in a subscale in such a manner that their behavioural response is truly a reflection of the underlying competency dimension that the item intends to measure. In addition, it is expected that moderate inter-item correlations between each subscale of mentor competencies ought to be present.

Descriptive item statistics were calculated to determine if the items in each subscale reflects the underlying competency. Item statistics were used to identify and delete poor items and includes item-total correlation, squared multiple correlation, difference in scale reliability when the item is deleted, difference in scale variance when the item is deleted, inter-item correlations, item mean and item standard deviation (Murphy & Davidshofer, 2005).

Item-total correlation may be defined as "the correlation of the item with the sum on all the items in a specific scale excluding the item itself" (Myburgh, 2012, p. 106). High item-total correlations imply that all items in the subscale does indeed measure the same construct[3]. In turn, low item correlation implies that the item is not related to the construct being measured, i.e. the mentor competency, as indicated by the majority of the other item in the subscale.

Squared multiple correlation can be defined as "the predicted Multiple Correlation Coefficient squared obtained by regressing the identified individual item on all the remaining items" (Gliem & Gliem, 2003, p. 84). A high correlation implies that the specific item does indeed reflect the common underlying latent variable, whereas a low correlation indicates that the variance in the item is not explained by the common latent variable found to underlie the majority of the items (Murphy & Davidshofer, 2005).

Difference in scale reliability when the item is deleted is examined in order to determine if the reliability of the subscale would be positively affected by the removal of the item in question. This method can therefore be used to determine if the item has the same underlying meaning as the rest of the items comprising the subscale. Items that, once removed, improves the reliability of the subscale ought therefore to be considered or removal altogether as the item is most likely not a good indicator of the construct being measured.

[3] Note that this does not imply that the construct is unidimensional.

Scale variance if an item is deleted can be defined as “excluding the individual item listed, all other scale items are summed for all individuals and the variance of the summated items are given” (Gliem & Gliem, 2003, p. 84). Poor items can therefore be identified through the increase of the subscale variance or the only slight decrease in variance once the item has been removed – poor items can therefore be said to have low variances.

Low variance in an item implies that the item cannot effectively reflect the differences in the latent variable. In addition, items with small item variance implies that the item will not co-vary with other items in the subscale. The item will therefore have low inter-item correlations, which can be defined as “the descriptive information about the correlation of each item with the sum of the remaining items” (Gliem & Gliem, 2003, p. 84). Lastly, item means are examined in order to identify skewed item score distributions due to extremely high (or low) means.

In the item analysis, no item was removed based on a single item statistic. Rather, the decisions regarding the removal of items was based on a combination of the statistical indicators described above.

4.3.1 Item Analysis Results

The item statistics described in the above section was used on each of the subscales of the MCQ, and the findings can be summarised as follows:

Table 4.1

Summary of Item Analysis Statistics

Nr.	Subscale	Sample Size	Mean	Number of Items	Variance	Standard Deviation	Cronbach's Alpha
1.	*Leading and Deciding (LD)*	151	13.583	6	12.191	3.4916	.767
2.	*Supporting (S)*	151	13.212	6	16.008	4.001	.829
3.	*Initiating, Communicating and Interacting (ICI)*	151	13.834	6	19.006	4.3596	.806
4.	*Adapting and Coping (AC)*	151	12.887	6	10.367	3.2198	.738
5.	*Empathy and Sensitivity (ES)*	151	13.715	6	16.992	4.1221	.786
6.	*Role Modelling (RM)*	151	12.748	6	14.416	3.7696	.771

Each of the subscales are presented below, along with discussions on the possibility of the removal of poor items.

4.3.1.1 Item Analysis of Leading and Deciding Subscale

The item statistics of the subscale (see Table 4.2) indicates that no item truly has an extremely high or extremely low means. However, the standard deviation of all items in the subscale are quite large, with item LD4 indicating an extremely large standard deviation of 1.0649 (S > 1). This may be a problematic indication, although additional statistical evidence is required before any decision can be made regarding the possible removal of item LD4.

Table 4.2

Item Statistics: Leading and Deciding Subscale

	Mean	Std. Deviation	N
LD1	1.934	.6896	151
LD2	2.199	.8002	151
LD3	2.106	.7407	151
LD4	2.656	**1.0649**	151
LD5	2.364	.8678	151
LD6	2.325	.9205	151

The inter-item correlation matrix (see Table 4.3) for the Leading and Deciding subscale indicates that item LD3 and LD5 may be problematic in terms of the low correlations found ($r_{ij} < .30$).

Table 4.3

Inter-item correlation matrix: Leading and Deciding subscale

	LD1	LD2	LD3	LD4	LD5	LD6
LD1	1.000	.399	.405	.350	**.252**	.307
LD2	.399	1.000	.504	.394	**.250**	.355
LD3	.405	.504	1.000	.342	**.282**	**.272**
LD4	.350	.396	.342	1.000	.360	.557
LD5	**.252**	**.250**	**.282**	.360	1.000	.352
LD6	.307	.355	**.272**	.557	.352	1.000

From table 4.3, the problematic items identified are therefore items LD3, LD5 and LD6. The item-total statistics will therefore be utilised to provide insight into whether or not any of these items ought to be removed. The item-total statistics (see Table 4.4) indicates that the deletion of item LD6 will significantly lower the scale variance and will not improve Cronbach's Alpha - the same can be said for items LD3 and LD5. Indeed no item that will improve Cronbach's Alpha or create a significant difference in the scale variance if deleted.

Table 4.4

Item-total statistics: Leading and Deciding subscale

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LD1	11.649	9.656	.481	.254	.742
LD2	11.384	8.971	.538	.346	.726
LD3	11.477	9.358	.504	.325	.736
LD4	10.927	7.575	.594	.393	.711
LD5	11.219	9.199	.425	.190	.755
LD6	11.258	8.406	.550	.357	.722

The Cronbach's Alpha of the subscale is .767, which although below the critical cut-off point of .80 recommended by several scholars (Myburgh, 2012), can still be deemed acceptable. Based on all of the above, the subscale and its items are therefore deemed acceptable. Even though items LD3, LD5 and LD6 all raised red flags in some point in the analysis, the results of the analysis as a whole ought to be considered before decisions can be made regarding the deletion of items. As such, it has been found that no item disturbs the internal consistency of the subscale and the Leading and Deciding subscale can therefore be accepted as is.

4.3.1.2 Item Analysis of Supporting Subscale

The Supporting subscale did not include any items with extremely high or low means as compared to the majority of the items (Table 4.5), although it should be noted that items S3 and S5 both sported positive standard deviations.

Table 4.5

Item Statistics: Supporting Subscale

	Mean	Std. Deviation	N
S1	1.848	.8850	151
S2	2.483	.9299	151
S3	2.709	**1.099**	151
S4	1.795	.7687	151
S5	2.358	**1.0221**	151
S6	2.020	.6779	151

The inter-item correlation matrix (Table 4.6) does not indicate significant problems, with the exception of the low correlation found between items S1 and S6 ($r_{ij} < .30$). However, both of these items indicate modest and moderately high correlations with the majority of other items and as such should not be earmarked for removal.

Table 4.6

Inter-Item Correlation Matrix: Supporting Subscale

	S1	S2	S3	S4	S5	S6
S1	1.000	.519	.530	.512	.414	**.283**
S2	.519	1.000	.537	.410	.574	.344
S3	.530	.537	1.000	.394	.616	.321
S4	.512	.410	.394	1.000	.425	.494
S5	.414	.574	.616	.425	1.000	.336
S6	**.283**	.344	.321	.494	.336	1.000

The Cronbach alpha of the Supporting subscale is .829, which can be described as highly satisfactory. The Cronbach alpha will not improve through the removal of one of the items, although it should be noted that only a slight decrease will be achieved if item S6 is removed (see Table 4.7). In addition, item S6 seems to have the lowest impact on the scale variance.

The item may be considered for deletion, however, as the item has indicated moderate correlations with the majority of items and does not raise any red flags in terms of means or standard deviations it has been decided by the author to not remove the item in question as the entirety of the statistical evidence does not support such an action.

Table 4.7

Item-Total Statistics: Supporting Subscale

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
S1	11.364	11.553	.610	.433	.799
S2	10.728	11.079	.657	.451	.789
S3	10.503	10.145	665	.487	.789
S4	11.417	12.285	.581	.417	.806
S5	10.854	10.605	.655	.482	.790
S6	11.192	13.316	.451	.279	**.828**

4.3.1.3 Item Analysis of Initiating, Communicating and Interacting Subscale

In Table 4.8, the items of the Initiating, Communicating and Interacting subscale does not indicate extremely high or low means, although it should be noted that the mean of item ICI4 is considerably higher than the majority of items. In addition, three items (ICI4 – ICI6) show positive standard deviations, which is worrisome.

Table 4.8

Item Statistics: Initiating, Communicating and Interacting Subscale

	Mean	Std. Deviation	N
ICI1	1.669	.8304	151
ICI2	1.722	.8339	151
ICI3	1.854	.9757	151
ICI4	**3.311**	**1.1899**	151
ICIC5	2.748	**1.1089**	151
ICI6	2.530	**1.1243**	151

The inter-item correlation matrix indicates that there are several inter-item correlations which falls well below the accepted standard of $r_{ij} \geq .30$, as can be seen in Table 4.9. As all items seems to contain at least one inter-item correlation that seems less than ideal, this may indicate factor fission which will be fully explored in the dimensionality analysis.

Table 4.9

Inter-Item Correlation Matrix: Initiating, Communicating and Interacting Subscale

	ICI1	ICI2	ICI3	ICI4	ICI5	ICI6
ICI1	1.000	.646	**.187**	.341	**.227**	**.296**
ICI2	.646	1.000	**.253**	.303	**.241**	.322
ICI3	**.187**	**.253**	1.000	493	.594	.417
ICI4	.341	.303	.493	1.000	.727	.559
ICI5	**.227**	**.241**	.594	.727	1.000	.439
ICI6	**.296**	.322	.417	.559	.439	1.000

The Cronbach alpha of the subscale is 0.806, which is entirely satisfactory. The deletion of any item does not seem to improve the Cronbach alpha, as indicated in Table 4.10. Based on all of the statistical evidence it is thus decided to retain all the items in the Initiating, Communicating and Interacting subscale with the view to further explore the possible factor fission of the subscale in the dimensionality analysis.

Table 4.10

Item-Total Statistics: Initiating, Communicating and Interacting Subscale

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ICI1	12.166	15.472	.435	.445	.801
ICI2	12.113	15.354	.452	.444	.798
ICI3	11.960	13.993	.656	.391	.777
ICI4	10.523	11.758	.715	.615	.736
ICI5	11.086	12.613	.656	.603	.753
ICI6	11.305	13.080	.573	.308	.774

4.3.1.4: Item Analysis of the Adapting and Coping Subscale

None of the items in the Adapting and Coping subscale shows extremely high or low means, nor do any of the standard deviations of the items raise red flags (see Table 4.11).

Table 4.11

Item Statistics: Adapting and Coping Subscale

	Mean	Std. Deviation	N
AC1	2.371	.9840	151
AC2	1.656	.7215	151
AC3	1.536	.7097	151
AC4	2.470	.8311	151
AC5	2.510	.8631	151
AC6	2.344	.7487	151

The inter-item correlation matrix (Table 4.12) indicates severe problematic areas in the correlations between items ($r_{ij} < .30$). No item seems to correlate satisfactory in its entirety with all other items, and items AC1 and AC2 may be seen as especially problematic. This may indicate factor fission and will be explored fully in the dimensionality analysis.

Table 4.12

Inter-Item Correlation Matrix: Adapting and Coping Subscale

	AC1	AC2	AC3	AC4	AC5	AC6
AC1	1.000	**.059**	**.143**	.389	.380	.332
AC2	**.059**	1.000	.611	**.183**	**.252**	**.135**
AC3	**.143**	.611	1.000	**.270**	.378	**.215**
AC4	.389	**.183**	**.270**	1.000	.593	.434
AC5	.380	**.252**	.378	.593	1.000	.480
AC6	.332	**.135**	**.215**	.434	.480	1.000

The Cronbach alpha of the subscale is .738, which can be deemed acceptable. The deletion of any item will not improve the Cronbach alpha of the subscale, as indicated in the item-total statistics (Table 4.13). It should be noted that the deletion of items AC1 and AC2 will not truly affect the Cronbach alpha of the subscale. These two items were also deemed to be problematic in the inter-item correlation matrix. These items have been red-flagged, although it would be hasty to consider the deletion of any of these two items before the possibility of factor fission has not yet been explored. Thus, the decision to delete any of the items in the Adapting and Coping subscale will only be made once the factor analysis of the subscale has been examined.

Table 4.13

Item-Total Statistics: Adapting and Coping Subscale

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
AC1	10.517	7.345	.358	.205	.736
AC2	11.232	8.459	.331	.375	.738
AC3	11.351	8.029	.456	.428	.707
AC4	10.417	7.111	.579	.405	.670
AC5	10.377	6.730	.646	.465	.647
AC6	10.543	7.783	.484	.281	.699

4.3.1.5 Item Analysis of the Empathy and Sensitivity Subscale

None of the items in the Empathy and Sensitivity Subscale indicates extremely high or extremely low means, although items ES1 and ES5 does show standard deviations of > 1 (see Table 4.14).

Table 4.14

Item Statistics: Empathy and Sensitivity Subscale

	Mean	Std. Deviation	N
ES1	2.675	**1.1267**	151
ES2	2.166	.9196	151
ES3	2.079	.8526	151
ES4	2.199	.9020	151
ES5	2.675	**1.2835**	151
ES6	1.921	.7441	151

The inter-item correlation matrix (Table 4.15) indicates that there are two instances where the inter-item correlation falls below the desired point of $r_{ij} \geq .30$. As with the two previous subscales, this may be taken as an indication that factor fisson is present in the subscale and the examination of the factor analysis of the subscale is needed to make further decisions regarding these items.

Table 4.15

Inter-Item Correlation Matrix: Empathy and Sensitivity Subscale

	ES1	ES2	ES3	ES4	ES5	ES6
ES1	1.000	.527	.366	.358	.613	**.287**
ES2	.527	1.000	.332	.362	.390	.438
ES3	.366	.332	1.000	**.283**	.341	.304
ES4	.358	.362	**.283**	1.000	.453	.371
ES5	.613	.390	.341	.453	1.000	.308
ES6	**.287**	.438	.304	.308	.308	1.000

The Cronbach alpha of the subscale is an acceptable .786, and the deletion of any items do not improve the Cronbach alpha, as Table 4.16 indicates. It should be noted that the multiple squared correlations of item ES3, ES4 and ES6 is lower in comparison to other items, although the deletion of these items seems to not positively affect the subscale. Further analysis in terms of dimensionality is therefore required to fully investigate the possibility of factor fission in the subscale.

Table 4.16

Item-Total Statistics: Empathy and Sensitivity Subscale

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ES1	11.040	10.932	.641	.484	.725
ES2	11.550	12.409	.577	.383	.745
ES3	11.636	13.473	.446	.203	.774
ES4	11.517	12.865	.512	.284	.760
ES5	11.040	10.265	.618	.447	.737
ES6	11.795	13.884	.461	.264	.772

4.3.1.6: Item Analysis of the Role Modelling Subscale

None of the items in the Role-Modelling subscale indicates extremely high or low means (see Table 4.17). It should be noted that two items, RM4 and RM6 indicates standard deviations of > 1.

Table 4.17

Item Statistics: Role-Modelling Subscale

	Mean	Std. Deviation	N
RM1	2.026	.7827	151
RM2	2.278	.9177	151
RM3	2.172	.9713	151
RM4	2.497	**1.0124**	151
RM5	1.828	.8387	151
RM6	1.947	**1.0119**	151

The inter-item correlation matrix (Table 4.18) indicates that there are several inter-item correlations which falls below the desired level ($r_{ij} < .30$). Especially item RM5, with its low cross-correlations with two other items seems to be problematic. As mentioned with the previous subscales, these results may be indicative of factor fisson, and will be further examined in the dimensionality analysis.

Table 4.18

Inter-Item Correlation Matrix: Role-Modelling Subscale

	RM1	RM2	RM3	RM4	RM5	RM6
RM1	1.000	.352	.459	.345	.444	.406
RM2	.352	1.000	**.275**	.439	.331	.310
RM3	.459	**.275**	1.000	.380	.511	.281
RM4	.345	.439	.380	1.000	**.235**	.423
RM5	.444	.331	.511	**.235**	1.000	**.296**
RM6	.406	.310	.281	.423	**.296**	1.000

The Cronbach alpha of the subscale is .771, which is satisfactory. When examining the item-total statistics (Table 4.19), it can be seen that items RM2 and RM6 have lower item-total correlation and squared multiple correlations than the majority of the other items. This does not seem to be indicative of major problems however, as the deletion of neither of these items improves the Cronbach alpha. Indeed, the deletion of any items seems not to have a positive effect on the statistics of the subscale. Therefore none of the items of the Role-Modelling subscale will be deleted and the possibility of factor fisson will be further explored in the dimensionality analysis.

Table 4.19

Item-Total Statistics: Role-Modelling Subscale

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
1	10.722	10.829	.577	.351	.726
2	10.470	10.677	.483	.269	.746
3	10.576	10.152	.536	.371	.732
4	10.252	10.016	.527	.335	.735
5	10.921	10.887	.511	.346	.739
6	10.801	10.254	.484	.269	.747

4.3.2 Summary of Item Analysis Results

The above section detailed the results of the item analysis. As mentioned in the introductory section of this chapter, it is necessary to analyse the items comprising of the MCQ in order to ensure that each of these items can successfully represent the various mentor competencies. The items of each subscale were designed to be uni-dimensional sets of items that function as homogenous stimulus sets. Respondents were expected to react to these stimulus sets in an uncontaminated expression of the mentor competency it is meant to represent. If all of these expectations were met it can be said that the item analysis was a success.

The success of the item analysis was measured by the results of the item statistics, which included item-total correlations, squared multiple correlations, inter-item correlations and Cronbach alpha coefficients. Success was deemed to be moderately high item-total correlations, squared multiple correlations and inter-item correlations. In addition, a Cronbach alpha of >.80 was desired, although generally a Cronbach alpha of >.70 can still be deemed satisfactory[4].

The items in the MCQ passed the stringent tests to be discredited and were shown to measure the mentor competencies satisfactorily. The exception to this is the low cross-correlations found in the Adapting and Coping subscale and Initiating, Communicating and Interacting

[4] It should be noted that even if all subscales demonstrate these statistical characteristics, it does not necessarily imply the subscale measures a uni-dimensional construct and neither does it imply that the construct being measured is the target variable as it was theoretically defined.

subscale. Both these subscales were earmarked to possibly contain factor fisson and as such, further analysis is required in terms of the dimensionality analysis. At this stage in the analysis of the MCQ no items were deleted.

4.4 DIMENSIONALITY ANALYSIS

The intention of the MCQ was to construct effectively one-dimensional sets of items that would reflect variance in each of the 6 latent dimensions of the mentor competency construct. The design intention was that a response to an indicator variable should be an expression of a specific underlying mentor competency variable. The latent first-order mentor competency dimension that is reflected in the indicator variables is assumed to be unidimensional. To evaluate the assumption that variance in the responses to the set of items comprising each subscale was to a sufficient degree brought about by a single underlying factor, principle axis factoring analysis with oblique rotation was performed on each of the 6 subscales. This process allows the evaluation of the success with which each indicator variable along with the rest of the items in the subscale measures the mentor competency dimension it professes to measure. A similar approach as was used in item analysis applies here. If the design intention succeeded to develop sets of items that successfully reflect a specific latent mentor competency dimension and this latent mentor competency dimension is a unidimensional construct, the extraction of a single factor should allow the accurate reproduction of the observed inter-item correlation matrix. The extraction of a single factor and having each item load reasonably high on the single factor that allows the accurate reproduction of the observed inter-inter item correlation matrix does not necessarily mean that the target latent mentor competency dimension carrying a specific constitutive definition has been successfully measured. The extraction of a single factor, along with adequate loadings on the factor will, however, imply that the hypothesis – that items in the specific subscale all successfully measure the target latent mentor competency dimension as constitutively defined has survived the opportunity to be falsified.

As mentioned previously, the design of the MCQ was created on the assumption that each of the six first-order competency factors is a unidimensional latent variable. Nevertheless, this should not be taken to mean that each of these mentor competencies are a narrow, specific construct. Indeed, the competencies of the MCQ was designed in the spirit of the Great Eight competencies of SHL, which are all broad representations of ideal workplace behaviour. Therefore each of the mentor competencies are in actual fact broad representations, grouping

together similar sets of behaviour under one competency label. For example, the Initiating, Communicating and Interacting competency includes the ability to initiate conversation at the beginning of the mentorship relationship, to continue communication throughout and to interact on a regular basis. It should therefore be expected that the six subscales of the MCQ should load on a single factor – although this loading may be modest because of the broad nature of the mentor competencies. In some cases where factor fission occurs the question needs to be asked as to whether or not the factor fission makes sense logically in terms of the design of the subscale. Specifically the question is whether the extracted factors can be considered meaningful sub-dimensions of the latent mentor competency dimensions as it was constitutively defined.

Factor analysis can be defined as referring to "a family of multivariate statistical procedures that seeks to condense a large number of observed variables into highly correlated groups that measure a single underlying construct" (Allen & Yen, 1979, p. 48). In terms of the MCQ, the observed variables are the extent of agreement with specific behavioural statements. The factor-analytic model is primarily focused on how values on the observed variables are generated by the underlying latent variables of factors, i.e. the factor loading pattern and the parameters characterising the regression paths from factors to observed variables (Byrne, 2001; Chikampa, 2013). In turn, factor loadings can be defined as the slope of the regression of an observed variable on the underlying factor that it is meant to represent (Allen & Yen, 1979).

It should be noted that not all scholars are in agreement as to factor analysis being the most effective procedure for determining the dimensionality of a subscale. Spangenberg and Theron (2004) argue that in factor analysis there is an inherent danger in extracting artefact factors reflecting differences in item difficulty value, kurtosis or variance only. This may be overcome by calculating descriptive statistics for the items of each subscale to determine the possibility of multiple factors appearing as an artefact of differential item characteristics like skewness (Schepers, 1992). Thus, descriptive statistics were calculated for each subscale in order to examine the possibility that the failure to corroborate the unidimensionality assumption, where it occurred, was due to differential item characteristics.

The Statistical Package for the Social Sciences (SPSS) 22.0 was used to perform a series of 6 exploratory factor analyses on the items of each of the subscales of the MCQ (see Table 4.20 for a summary).

Table 4.20

Summary of principal factor analysis results

Subscale	Determinant	KMO	Bartlett X^2	% Variance explained	No. of factors extracted
Leading & Deciding	.247	.799	205.771*	36.388	1
Supporting	.120	.810	311.993*	45.499	1
Initiating, Communicating and Interacting	.096	.730	344.947*	44.213	2
Adapting and Coping	.203	.730	234.908*	36.622	2
Empathy and Sensitivity	.201	.789	235.892*	39.108	1
Role-Modelling	.237	.779	211.752*	36.811	1

Note. *p < 0.01

4.4.1 Evaluating the Factor Analysability of the Inter-Item Correlation Matrix

In evaluating the factor analysability of the inter-item correlation matrix the focus is not on whether or not the correlation matrices are analysable, but rather whether a single factor can satisfactorily explain the observed correlation matrix. Statistics evaluating the factor analysability of the correlation matrices will therefore be interpreted as comments on the unidimensionality assumption.

The Keiser-Meyer-Olkin (KMO) measure and Bartlett's test were used to examine the factor analysability of the observed inter-item correlation matrices. The KMO measure represents the ratio of the sum of the squared partial inter-item correlation coefficients (Sricharoena & Buchenrieder, 2005). The measure varies between 0 and 1 with values closer to 1.00 being the desired outcome, as a value of 1 will occur when the items reflect a single common underlying factor so that when this factor is statistically controlled, the correlation between items will approach zero. The correlation matrix is considered factor analysable when KMO approaches unity (or at least > .6). In the MCQ, the KMO ranged between .730 and .810 (Table 4.20), therefore all the correlation matrices are factor analysable.

Bartlett's tests was also used to examine the factor analysability of the observed inter-item correlation matrices. The test involves testing the null hypothesis that the inter-item correlation matrix is an identity matrix in the parameter – where an identity matrix is seen as a matrix in which all items correlate only with themselves and not with each other (i.e. all the diagonal elements are equal to 1 and all the off diagonal elements are equal to 0). With the MCQ, the null hypothesis could be rejected for all 6 subscales – thus, the correlation matrices are factor analysable.

Thus, both the KMO and Bartlett's test of sphericity both suggest that it would be meaningful to continue the data analysis by conducting a factor analysis on the 6 inter-item correlation matrices.

4.4.2 Factor Extraction Method

Thus, each of the 6 subscales comprising the MCQ were factor analysed using principle axis factor analysis. Several extraction methods are available through SPSS software, including unweighted least squares, maximum likelihood, principle axis factoring, principle component analysis and image factoring. Each of these extraction methods have their own relative strengths and weaknesses, although Costello and Osborne (2005) notes that the details of these statistical techniques in terms of strengths and weaknesses are scarce and not readily available. However, Chikampa (2013) and Myburgh (2011) both recommend Nunelly (1978) and Tabachnik and Fidell (2001) as containing comprehensive descriptions of the extraction methods.

In terms of factor extraction, two possible routes of action are available: principle component analysis and factor analysis. Principle component analysis does not differentiate between common and unique variance as it endeavours to determine factors which account for the total unique and common variance in a subset of variables (Fabrigar, Wegener, MacCallum & Strahan, 1999). In contrast, factor analysis seeks the least number of factors which can account for the common variance shared by observed variables. Consequently, principle component analysis was rejected in favour of factor analysis as the latter better serves the research purpose of the study by specifically examining whether items in each subscale only reflects one underlying mentor competency factor. The principle axis factory method was used in this study as it provides a factor decomposition that has been described as "easily interpretable" (Costello & Osbourne, 2005).

4.4.3 The Decision on the Number of Factors to Extract

A decision needs to be made regarding the number of factors to extract that will be meaningful for interpretation. The more factors that are extracted, the better the fit between the observed and reproduced correlation matrices, however factor structure becomes less parsimonious as the number of factors increases (Tabachnick & Fidell, 2001). The retained factors should account for the covariance between the items of the particular subscale. The decision as to the number of factors to extract was guided by theory – as recommended by Fabrigar *et al.* (1999) – and therefore the eigen-value-greater-than-one criterion and the scree test were used in this study.

4.4.3.1 Eigenvalue-Greater-Than-One Criterion

Eigenvalue is the amount of variance accounted for by a factor, it is therefore the sum of the squared factor loadings of the observed variables in a column (Hardy & Bryman, 2004). Thus, it is the sum of the variances for each variable – or mentor competency in this case. The method is also known as the Kaiser criterion as it is from Kaiser (1960), later adapted by Guttman (1954), that the standard of the criterion was set at eigenvalues-greater-than-one (Taylor, 2005).

In this study, eigenvalues was therefore computed for the correlation matrix. Eigenvalues of less than 1.00 are ignored as they do not contribute meaningfully to the variance of the variable[5].

4.4.3.2 Scree Test

Taylor (2005) defines the word "scree" to mean the rubble at the bottom of a cliff. In its statistical meaning, it would refer to the number of factors extracted before the break in the scree plot – with the factors extracted representing the "cliff" and the remaining factors with small eigenvalues representing the "rubble at the bottom" (Taylor, 2005). The scree test is therefore the graph of eigenvalues of the extracted factors plotted against the number of factors extracted, with a break between factors with high and low eigenvalues.

[5] It should be noted that the cut-off point of an eigenvalue of 1.00 should be seen as a rough guideline and not an absolute rule. Taylor (2005) cautions that factors can fall very close to the cut-off on either side of the 1.00 mark. For example, a value of 1.01 would be accepted but a value of .99 would be rejected, when in actual fact the difference of contributing variance between these two factors are negligible. Hardy and Bryman (2004) proposes extracting both more and fewer factors than suggested by the eigenvalue-greater-than-one rule to assess whether these factors, when rotated, are meaningful.

This method has been criticized for its subjectivity and ambiguity, as no clear breaks or multiple breaks can be observed in the scree plot (Hayton & Scarpello, 2004). Nevertheless, a scree test was utilised in the study, with the necessary decisions made regarding the subjective inclusion of the factors left up to the discretion of the researcher.

4.4.4 Rotation of Extracted Factors

If more than a single factor has been extracted, the factors extracted are rotated in order to derive meaning from them (Moyo, 2009). Therefore, rotation is the method of re-orientating factors in order to make the factor loadings more interpretable (Powell & Peng, 1989). Several options are available regarding rotation, namely the three methods of orthogonal rotation (varimax, quartimax and aquamax) and the three methods of oblique rotation (direct oblimin, quartimin and promax) (Costello & Osborne, 2005; Tabachnick & Fidell, 2001).

In terms of the MCQ, it was expected that the exploratory factor analysis performed on each subscale would result in the extraction of only one factor underlying each mentor competency subscale. If only one factor is extracted, rotation is not required as it will not be meaningful. However, if factor fission occurs provision has to be made for the possibility that extracted factors may be correlated. Within this study, the oblique rotation method was utilised to aid in interpretation and reporting in the case of factor fission.

4.4.5 Differential Skewness

The extraction of artefact factors reflecting differences in skewness or other statistical characteristics could be the result of differential item skewness or other statistical characteristics (Schepers, 1992). There is therefore a need to articulate descriptive statistics for each item. Most of the items reflected a significantly ($p < 0.05$) negatively skewed and leptokurtic distribution. The likelihood that differential item characteristics can account for the factor fission observed on two of the subscales therefore seems low.

4.4.6 Discussion of the Dimensionality of the Individual Scales of the MCQ

A summary of the dimensionality analysis of each of the subscales of the MCQ is presented below. Principle axis factor analysis with oblique rotation was used to determine unidimensionality. In addition, decisions regarding the extraction of factors were made on the basis of the eigenvalue-greater-than-one rule and the scree plot.

4.4.6.1 Dimensionality Analysis of the Leading and Deciding Subscale

The design intention of the six items created for the Leading and Deciding subscale was that all items reflect a single underlying competency dimension. The factor matrix of the subscale indicates the partial regression coefficients that reflects the relationship between the items and the underlying factor.

Table 4.21

Factor Matrix: Leading and Deciding Subscale

	Factor 1
LD1	.564
LD2	.644
LD3	.600
LD4	.687
LD5	**.481**
LD6	.622

The factor matrix of the subscale, Table 4.21, indicates that a single factor is required to satisfactorily explain the observed correlations between six items of the subscale. Only one item had an eigenvalue greater than one. In addition, the scree plot also suggested the extraction of a single factor. All items have satisfactory loadings on the extracted factor (> .50), with the exception of item LD5. However, as item LD5 has a factor loading nearing the desired level of .5, the item is not regarded as highly problematic and will be included in the Leading and Deciding Subscale.

There are seven (46%) non-redundant residuals with absolute values greater than .05, implying that the solution provides a reasonably satisfactory explanation for the observed inter-item correlation matrix. The unidimensionality assumption is corroborated for the Leading and Deciding subscale as 46.768% of the variance can be explained by the extracted factor.

4.4.6.2 Dimensionality Analysis of the Supporting Subscale

The unidimensionality assumption that the six items in the Supporting subscale all reflect a single underlying competency factor was confirmed. Only a single factor could be found with

an eigenvalue larger than one. The scree plot further indicates the necessity of only extracting a single factor.

Table 4.22

Factor Matrix: Supporting Subscale

	Factor 1
S1	.680
S2	.728
S3	.738
S4	.646
S5	.724
S6	.501

As indicated in the factor matrix (Table 4.22), all items have strong loadings on the single extracted factor (> .5). Residuals were computed between observed and reproduced correlations, with seven (46%) non-redundant residuals identified that had absolute values greater than .05. The single factor solution thus provides a satisfactory explanation for the observed inter-item correlation matrix. In addition, the single factor explains 54.258% of the variance, corroborating the unidimensionality assumption.

4.4.6.3 Dimensionality Analysis of the Initiating, Communicating and Interacting Subscale

The unidimensionality assumption that the six items comprising the Initiating, Communicating and Interacting subscale reflects a single underlying competency factor reveals that two factors are necessary to explain the observed correlations between the items of the subscale, as indicated by Table 4.23. Two factors have eigenvalues of greater than one, this is also demonstrated by the scree plot.

Table 4.23

Factor Matrix: Initiating, Communicating and Interacting Subscale

	Factor 1	Factor 2
ICI1	.557	**.579**
ICI2	.570	**.563**
ICI3	.614	-.224
ICI4	.810	-.227
ICI5	.778	-.368
ICI6	.616	-.058

The pattern matrix shown above in Table 4.23 indicates that all items load significantly high (> .5) on the first extracted factor. Additionally, the first two items (ICI1 and ICI2) load significantly on the second extracted factor (> .5). In the case of factor fission, the question needs to be asked regarding if meaningful underlying themes can be found in the wording of the items that load onto the additional extracted factor. Items ICI1 and ICI2 both allude to the initiating of conversation between mentor and mentee, whereas the majority of the items alluded to the regularity and ease of conversation with the mentor. The additional factor that was extracted is therefore not surprising in terms of the theoretical development of the items. Both of these extracted items can therefore be seen as meaningful sub-dimensions of the Initiating, Communicating and Interacting competency.

Residuals were calculated between the observed and reproduced correlations. There were only two (13%) non-redundant residuals with absolute values greater than .05. The extracted two-factor solution is therefore a highly credible explanation for the observed inter-item correlation matrix. As 50.783% of the variance is explained by the first factor and 20.832% of the variance is explained by the second factor, it can be stated that the unidimensionality assumption is not corroborated by the Initiating, Communicating and Interacting subscale.

To examine if the items in the subscale do reflect a single underlying competency dimension to a certain extent, the extraction of a single factor was forced in SPSS.

Table 4.24

Factor Matrix: Forcing a Single Factor for the Initiating, Communicating and Interacting

	Factor 1
ICI1	**.465**
ICI2	**.480**
ICI3	.629
ICI4	.832
ICI5	.762
ICI6	.640

The factor matrix (Table 4.24) indicates the loadings of the items on the forced single factor. All items except ICI1 and ICI2 have a factor loading of higher than .5. It is no surprise that these items load lower on the forced single factor than the majority of the items, as these two specific items were also the only items to load on a secondary factor. As both of the item loadings are nearing the desired level of .5, both items will remain in the subscale. The items in the Initiating, Communicating and Interacting subscale therefore satisfactorily reflect a single second-order underlying factor.

4.4.6.4 Dimensionality Analysis of the Adapting and Coping Subscale

In evaluating the unidimensionality assumption of the Adapting and Coping subscale it was found that two factors are required to explain the observed correlations. Two factors had eigenvalues of greater than one and the scree plot further demonstrated the need to extract two factors.

Table 4.25

Factor Matrix: Adapting and Coping Subscale

	Factor 1	Factor 2
AC1	**.447**	-.274
AC2	**.495**	**.580**
AC3	.623	**.520**
AC4	.684	-.282
AC5	.767	-.206
AC6	.555	-.248

As can be seen in Table 4.25, two items load significantly onto the second extracted factor (> .5). Upon further examination of these items (AC2 and AC3) it was found that both items alluded to the ability of the mentor to cope with differences in terms of language or culture between the mentor and the mentee. It will therefore make theoretical sense that a meaningful sub-dimension of the competency has been captured in the form of these two questions. It should be noted that two items did not load significantly on the first extracted factor (< .5), namely AC1 and AC2. Although item AC2 nears the desired level to such an extent, that the item can still be deemed satisfactory. However, item AC1 seems troublesome, as the item did not load significantly onto the first extracted factor (.447) and loaded negatively on the second factor.

Residuals were computed between the observed and reproduced correlations. There were zero (0%) non-redundant residuals with an absolute value of greater than .05. As 44.382% of the variance explained by the first factor extracted and 21.836% of the variance is explained by the second factor, the unidimensionality assumption is not corroborated. In an attempt to identify a single second-order underlying factor a second analysis was run in which SPSS was forced to extract a single factor.

Table 4.26

Factor Matrix: Adapting and Coping Subscale Forced Single Factor

	Factor 1
AC1	**.463**
AC2	**.384**
AC3	.502
AC4	.700
AC5	.804
AC6	.573

In Table 4.26, the forced single factor identified two troublesome items, AC1 and AC2, which both fell below the desired level of .5. Although item AC2 has the lowest factor loading, it has already been established that this factor taps into a significant sub-dimension of the Adapting and Coping competency. The worrying result is the low factor loading of item AC1. Upon further investigation, it was found that the wording of item AC1 is perhaps at fault. The item reads: "*I felt that my mentor/I was able to handle the pressure of being a full-time student and a Rachel's Angels mentor"*. The item was meant to capture the ability of the mentor to cope with the pressures of the mentoring programme, but instead the question may allude more to time management or personal stress management. Either way, the item may be seen as a weak item and was thusly removed from the subscale.

A new analysis was therefore conducted to determine if the unidimensionality assumption that the now five items of the Adapting and Coping subscale reflected a single underlying competency factor. Yet again, a two factor solution proved necessary to satisfactorily explain the observed correlations of the items in the subscale.

Table 4.27

Factor Matrix: Adapting and Coping Subscale [II]

	Factor 1	Factor 2
AC2	.549	**.524**
AC3	.672	**.462**
AC4	.646	-.340
AC5	.759	-.301
AC6	.519	-.288

As can be seen in the factor matrix (Table 4.27), a two factor solution is necessary. This finding of a two factor solution is not a surprise, as it was previously established that items AC2 and AC3 measure a meaningful sub-dimension of the Adapting and Coping competency. In order to determine if a second-order single underlying factor could be found, SPSS was forced to extract a single factor.

Table 4.28

Factor Matrix: Adapting and Coping Subscale Forced Single Factor [I]

	Factor 1
AC2	**.442**
AC3	.559
AC4	.657
AC5	.788
AC6	.540

The factor matrix (Table 4.28) of the forced single factor indicates that all items loaded significantly onto the single factor (> .5), with the exception of item AC2. Although, as item AC2 nears the desired level of .5, the item cannot be regarded as problematic.

4.4.6.5 Dimensionality Analysis of the Empathy and Sensitivity Subscale

In evaluating the unidimensionality assumption that the six items of the Empathy and Sensitivity scale reflects a single underlying competency factor, the factor analysis conducted

through SPSS suggests that only a single factor is required to explain the observed correlations between the items of the subscale. Only one item was extracted with an eigenvalue of larger than one. The scree plot further suggests the extraction of only a single item.

Table 4.29

Factor Matrix: Empathy and Sensitivity Subscale

	Factor 1
1	.734
2	.668
3	.504
4	.578
5	.706
6	.526

As indicated in the factor matrix (Table 4.29), all items have a highly satisfactory loading on the extracted factor (> .5). The residuals computed for the extracted factor solution indicates that there are seven (46%) non-redundant residuals with absolute values greater than .05. Lastly, the extracted factor explains 48.836% of the variance of the subscale, thus confirming the unidimensionality assumption made about the Empathy and Sensitivity subscale.

4.4.6.6 Dimensionality Analysis of the Role-Modelling Subscale

The extraction of a single factor with an eigenvalue of greater than one and the confirmation in the scree plot both indicate that the unidimensionality assumption of the Role Modelling subscale is confirmed.

Table 4.30

Factor Matrix: Role-Modelling Subscale

	Factor 1
1	.680
2	.551
3	.644
4	.591
5	.607
6	.557

Table 4.30 indicates that all items have satisfactory high loadings on the extracted factor (> .5). The residuals calculated between the observed and reproduced correlations indicate that there are seven (46%) non-redundant residuals with absolute values greater than .05. The extracted factor explains 47.226% of the variance in the item data, indicating the assumption of a single underlying competency factor is confirmed.

4.4.7 Summary of the Dimensionality Analysis Results

The MCQ consists of six latent variables that each represent a mentor competency thought to be a required set of behaviours in order to be a successful Rachel's Angels mentor. Mentors and mentee's should respond to items with behaviour that is primarily expressed by a specific competency variable.

The results from the dimensionality analysis show satisfactory proof that items correspond with a single underlying factor. Two subscales showed factor fission, however a second-order single factor was easily found for the Initiating, Communicating and Interacting subscale. The Adapting and Coping subscale proved to be somewhat problematic, however a satisfactory second-order single factor was found after the deletion of a weak item (AC1). All following analysis will therefore be conducted without item AC1, as the adapted subscale now only contains five items.

4.5 EVALUATION OF THE PRIMARY MEASUREMENT MODEL

The MCQ was designed in order to create a measure by which Rachel's Angels mentors may be assessed in terms of six competencies. The measure meant to capture the behaviour of mentors in the responses given on each of the items in the subscales. The following section will examine the analysis results acquired from LISREL 8.8 in order to determine if the premeditated operational design of the MCQ succeeded in its attempt at providing a valid measure of youth mentor competencies in the context of Rachel's Angels.

4.5.1 Variable Type

The items of the MCQ was designed in such a manner that the items are meant to reflect each of the six mentor competencies required to be a successful Rachel's Angels mentor. The ideal approach in regards to the measurement model fit would have been to have the individual items serve as indicator variables of the mentor competencies. However, due to the small sampling size (n = 151), it was deemed more prudent to calculate item parcels that would serve as indicator variables[6]. Two item parcels were created to represent each mentor competency, with each parcel containing between 2 and 3 items. The parcels themselves were created through calculating the mean score on the odd numbered items and the mean on the even numbered items of each scale. These parcels simplifies the logistics of fitting the measurement model in addition to creating more reliable indicator variables (Nunnally, 1987). The item parcels were interpreted as continuous variables and as such, maximum likelihood (or robust maximum likelihood) estimation was still possible in analysing the covariance matrix (Jöreskog & Sörbom, 1996a; 1996b).

4.5.2 Univariate and Multivariate Normality

In social sciences research the default procedure when estimating model parameters for the purpose of fitting a measurement model to continuous data, is that of maximum likelihood estimation (Moyo, 2009). However, this method as well as the methods of generalised least squares (GLS) and full information maximum likelihood (FIML), assumes that data follows a normal distribution. Should analysis be conducted on non-normal variables using any of the methods mentioned above, the result would be incorrect standard errors and chi-square estimates – which can lead to potentially wrong conclusions regarding the significance of the measurement model. The need therefore arises to evaluate the univariate and multivariate

[6] See section 3.6.3.3.1 for a full discussion on the merits of parcelling.

normality of the indicator variables in order to determine the appropriate method of analysis to use.

Table 4.31

Tests of Univariate and Multivariate Normality

	Skewness		Kurtosis		Skewness and Kurtosis	
Variable	Z-Score	P-Value	Z-Score	P-Value	Chi-Square	P-Value
LDP1	.3556	.000	1.818	.069	15.948	.000
LDP2	2.971	.003	.683	.494	9.296	.010
SP1	2.690	.007	-1.070	.285	8.381	.015
SP2	3.435	.001	1.694	.090	14.668	.001
ICIP1	3.436	.001	.652	.514	12.233	.002
ICIP2	1.693	.091	-1.198	.231	4.300	.116
ACP1	3.937	.000	1.238	.216	17.030	.000
ACP2	2.991	.003	1.384	.166	10.860	.004
ESP1	1.948	.051	-1.845	.065	7.199	.027
ESP2	4.069	.000	2.020	.043	20.638	.000
RMP1	2.907	.004	.403	.687	8.612	.013
RMP2	3.557	.000	1.285	.199	14.305	.001

As can be seen in the above Table 4.31, the null hypothesis of univariate normality had to be rejected ($p < .05$) in the case of eleven out of the twelve composite indicator variables. In addition, as shown below in Table 4.32, the null hypothesis that the data follows a multivariate normal distribution had to be rejected as well ($p < .05$).

Table 4.32

Test of multivariate normality for item parcels

	Skewness		Kurtosis			Skewness and Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
33.821	13.272	.000	217.114	9.119	.069	15.948	.000

As a consequence of rejecting both the null hypothesis of univariate and multivariate normality, PRELIS was used in an attempt to normalise the indicator variable distribution.

Table 4.33

Test of multivariate normality (after normalisation)

	Skewness		Kurtosis			Skewness and Kurtosis	
Value	Z-Score	P-Value	Value	Z-Score	P-Value	Chi-Square	P-Value
21.871	6.006	.000	191.249	5.893	.000	70.804	**.000**

As can be seen in Table 4.33, the normalisation procedure succeeded in improving the multivariate symmetry and kurtosis of the indicator variable distribution. However, the procedure did fail in its attempt to remedy the lack of multivariate normality ($p < .05$). Consequently, the use of maximum likelihood estimation in the analysis of the measurement model fit was rejected.

A more fitting technique was chosen in the evaluation of the fit of the measurement model in the face of this lack of normalisation, namely robust maximum likelihood estimation. Therefore, all analyses of the measurement model fit was to be conducted using robust maximum likelihood estimation and in addition, as the attempt at normalisation proved to reduce the deviation of the observed indicator distribution, the normalised data was used in all factor analyses (Chikampa, 2013).

4.5.3 Assessing the Overall Goodness-of-Fit of the First Order Measurement Model

The design of the MCQ implies a specific measurement model that has been outlined in Chapter 3. Each item in the MCQ is grouped into an item parcel that represents the indicator variables to each of the six mentor competencies. The confirmatory factor model was fitted

by analysing the covariance matrix calculated from the 151 observations in the MCQ item parcel data set. LISREL 8.8 was used to conduct structural equation modelling whereby the hypothesis that the measurement model explains the covariance matrix was tested.

The exact fit null hypothesis, as given in Chapter 3, was tested in order to determine if the measurement model indicates excellent fit – that is to say, if the measurement model is able to reproduce the observed covariance matrix so accurately that it could only be explained in terms of sampling error (Myburgh, 2013). The exact fit null hypothesis is thus:

$$H_{01}: \text{RMSEA} = 0$$

$$H_{a1}: \text{RMSEA} > 0$$

The close fit null hypothesis was further tested in order to examine if the measurement model indicates good fit (MacCallum, Browne & Sugawara, 1996):

$$H_{02}: \text{RMSEA} \leq .05$$

$$H_{a2}: \text{RMSEA} > .05$$

The measurement model was fitted through PRELIS by analysing the covariance matrix calculated from the item parcel data set. Item parcels were treated as continuous variables. The solution for the parameter estimates where found after ten iterations through using robust maximum likelihood estimation.

It should be noted that the fit of the measurement model was evaluated through an integrative judgement based on the entire range of fit indices offered by LISREL 8.8. Therefore, no one single indicator of fit was used to access the goodness of fit of the measurement model, as recommended by numerous scholars (Bollen & Long, 1993; Schumaker & Lomax, 1996; Diamantopoulos & Sigauw, 2000).

Table 4.34

Goodness of Fit Statistics

Goodness of Fit Statistics
Degrees of Freedom = 39
Minimum Fit Function Chi-Square = 91.780 (P = 0.000)
Normal Theory Weighted Least Squares Chi-Square = 86.150 (P = 0.000)
Satorra-Bentler Scaled Chi-Square = 71.517 (P = 0.00115)
Chi-Square Corrected for Non-Normality = 87.626 (P = 0.000)
Estimated Non-centrality Parameter (NCP) = 32.517
90 Percent Confidence Interval for NCP = (12.612 ; 60.246)
Minimum Fit Function Value = 0.612
Population Discrepancy Function Value (F0) = 0.217
90 Percent Confidence Interval for F0 = (0.0841 ; 0.402)
Root Mean Square Error of Approximation (RMSEA) = 0.0746
90 Percent Confidence Interval for RMSEA = (0.0464 ; 0.101)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0720
Expected Cross-Validation Index (ECVI) = 0.997
90 Percent Confidence Interval for ECVI = (0.864 ; 1.182)
ECVI for Saturated Model = 1.040
ECVI for Independence Model = 24.715
Chi-Square for Independence Model with 66 Degrees of Freedom = 3683.272
Independence AIC = 3707.272
Model AIC = 149.517
Saturated AIC = 156.000
Independence CAIC = 3755.479
Model CAIC = 306.191
Saturated CAIC = 469.348
Normed Fit Index (NFI) = 0.981
Non-Normed Fit Index (NNFI) = 0.985
Parsimony Normed Fit Index (PNFI) = 0.579
Comparative Fit Index (CFI) = 0.991
Incremental Fit Index (IFI) = 0.991
Relative Fit Index (RFI) = 0.967
Critical N (CN) = 131.939

Table 4.34 (Continued)

Goodness of Fit Statistics (Primary Measurement Model)

Root Mean Square Residual (RMR) = 0.0184
Standardized RMR = 0.0340
Goodness of Fit Index (GFI) = 0.913
Adjusted Goodness of Fit Index (AGFI) = 0.825
Parsimony Goodness of Fit Index (PGFI) = 0.456

In evaluating the measurement model fit, the full range of fit indices shown above in Table 4.34, together with the information on the magnitude and distribution of the standardised residuals, evaluation of the number of large modification indices calculated for factor loading matrix (Λ) and the measurement error variance matrix (Θ_δ). The entire sum of evidence was thusly used in order to make a judgement about the measurement model fit. In addition, conscious thought was given to taking theoretical, statistical and practical considerations into account as failure to do so may result in a deficient representation of the goodness of fit (Byrne, 1998).

4.5.3.1 Fit Indices Interpretation and Discussion

The following section will discuss and interpret a range of the fit indices indicated in Table 4.34. These findings will form part of the basket of evidence in evaluating the measurement model.

A Satorra-Bentler Scaled Chi-Square of 71.517 with 39 degrees of freedom was calculated. This table provides insight regarding the null hypothesis (H_{01}: RMSEA = 0) through utilising the Satorra Bentler χ^2 statistic. The table is calculated through the equation ½k(k + 1) – t, where k represents the number of observed variables and t the number of parameters to be estimated.

As a statistically significant result was achieved ($p < .01$), it can be said that the model is not adequate (Kaplan, 2000). The exact fit null hypothesis (H_{01}: RMSEA = 0) can therefore be rejected in favour of H_{a1}. This result therefore indicates that the measurement model is unable to reproduce the observed covariance matrix of the 151 observations to such a degree of accuracy that the only difference between the observed sample covariance matrix and the reproduced sample covariance matrix can be explained by the sampling error. Kenny (2014)

states that the sample size as well as the size of the correlations in the model affects the Chi Square, as larger correlations usually result in poor fit. The indicator should rather be viewed as a measure of the "goodness" of fit, as an exact fit is unrealistic (Kaplan, 2000). However, there is no universally agreed upon standard as to what constitutes good or bad fit (Kenny, 2014).

An additional fit index regarding the chi-square involves assessing the degree of the lack of fit of the model through the estimation of the non-centrality parameter (Diamantopoulos & Sigauw, 2000). This method involves treating the chi-square statistic as a badness-of-fit measure by expressing the minimum fit function chi-square in terms of the degrees of freedom – thus $\chi^2/df = 2.353$ (Theron & Spangenberg, 2004). A rule of thumb regarding the fit index is that values less than 2 are regarded as indicative of an over-fitted model, between 2 and 5 indicates a good fit, and greater than 5 shows poor fit (Kelloway, 1998). The measurement model with a value of 2.353 is therefore indicative of good fit. However, this fit index should be treated with caution, as Kenny (2014) states that it is "old" and "too liberal", resulting in too many Type 1 errors then variables have non-normal distributions and small sample sizes.

According to Diamantopoulos and Sigauw (2000), if one assumes that the first-order measurement model only approximates the processes that operated in reality to create the observed covariance matrix, then the χ^2 test statistic would follow a non-central χ^2 distribution with a non-centrality parameter (λ). This discrepancy between the observed (Σ) and the estimated population co-variance ($\Sigma\hat{}$) matrices are reflected in the estimated λ value of 87.626.

Spangenberg and Theron (2005) and Jöreskog and Sörbom (1993) explains that the first order measurement model was fitted by minimising a fit function that compares the observed sample covariance matrix (S) to the reproduced sample covariance matrix ($S\hat{}$) derived from the model parameter estimates. The model fit is therefore reflected by the extent to which the minimum fit function value (0.612) approaches zero. In addition, the estimated population discrepancy value (F_0) "reflects the extent to which the observed population covariance matrix (Σ) is estimated to differ from the reproduced population covariance ($\Sigma\hat{}$), which results from the parameters minimising the selected discrepancy function fitting the model on Σ" (Myburgh, 2013, p. 151). The F_0-value of a model that shows exact fit is therefore zero, as the observed population covariance Σ would be exactly equal to the estimated population

covariance matrix (Σ). The measurement model of the MCQ has a low F_0-value of 0.217, with confidence interval limits of .0841 and .402, which comment favourably on the fit of the model.

The root mean square error of approximation (RMSEA) indicates the discrepancy between the observed population covariance matrix and the estimated population covariance matrix implied by the model per degree of freedom. According to Kenny (2014) values below .05 are indicative of good fit, whereas values below .08 are indicative of reasonable fit. Furthermore, values between .08 and .1 may be regarded as indicative of mediocre fit, with values larger than .1 showing poor fit. Models with exact fit would have an RMSEA value of zero. The RMSEA is calculated through the equation $(F_0/df)^{½}$, where F_0 indicates the population discrepancy function value and *df* represents the degrees of freedom. The measurement model underlying the design of the MCQ indicates a reasonable fit (RMSEA = .0746) as the value falls below the cut-off of .08. The 90 percent confidence interval for RMSEA (0.0464 – 0.101) includes a rather large range, which may be due to the small sample size available. LISREL tests the close fit parameter by testing H_{02}: RMSEA ≤ .05 against H_{a2} RMSEA > .05. The probability of observing a sample RMSEA value of 0.0746 under H_{02} is sufficiently large (.072) than the critical p-value of .05. Therefore, H_{02} is not rejected (p > .05).

The expected cross-validation index (ECVI) is a good indicator of overall model fit as it focuses on overall error in addition to focusing on error due to approximation (Diamantopoulos & Sigauw, 2000; Spangenberg & Theron, 2005). The EVCI calculates the discrepancy between the reproduced sample covariance matrix (Sˆ) and the expected covariance matrix obtained in the independent sample. The measurement model underlying the design of the MCQ indicates an ECVI (.997) that is smaller than the value of the independence model (ECVI = 24.715) and the saturated model (ECVI = 1.040). Smaller values indicate a more parsimonious fit (Kelloway, 1998), thus the small ECVI value of the MCQ is indeed positive result. These values do indeed indicate a positive fit, commenting positively on the probability of the model fit being replicated in a cross-validation sample as compared to the saturated or independence models.

The fit of a model can be improved through adding more paths to the model and estimating more parameters until a perfect fit is achieved in the form of a saturated or just-identified model with no degrees of freedom (Spangenberg & Theron, 2005). The assessment of parsimonious fit should therefore be based on this recognition that better fit may be achieved

by adding more parameters (Kelloway, 1998). However, the objective of research in model building is to achieve satisfactory fit with as few model parameters as possible – which will also be the purpose of this study.

The Akaike information criterion (AIC) is a comparative measure of fit and is therefore only meaningful if two different models is estimated (Kenny, 2014). Smaller values on the AIC indicates more parsimonious fit, although there is no consensus in how small these values ought to be (Kelloway, 1998; Moyo, 2009). In the case of the MCQ, the AIC value (149.517) indicates a more parsimonious fit than the independent model (3707.272) and the saturated model (156.000). In addition, the consistent Akaike information criterion (CAIC = 306.191) also suggests that the fitted measurement model provides a more parsimonious fit because of the smaller values found in the independent model (3755.479) and the saturated model (469.348).

Numerous comparative fit indices are available through LISREL 8.8, from these the fit indices of note to this study is the normed fit index (NFI), the non-normed fit index (NNFI), the comparative fit index (CFI) and the incremental fit index (IFI). According to Diamantopoulos and Sigauw (2000) values exceeding .90 are indicative of good fit.

The normed fit index (NFI) represents the position of the covariance among the observed variables explained by a target model when using the null model as a baseline (Hoyle, 1995). In the cause of the MCQ, the NFI = .98, indicating that the model fits 98% better than the null model. Although this indicates excellent fit, the measure has been criticized by several scholars (Kelloway, 1998; Kenny, 2014).

The non-normed fit index (NNFI) has the same underlying logic as the NFI, however the index overcomes a drawback of the NFI in that it allows the adjusting of the normed fit index for the number of freedom (Kenny, 2014). In the case of the MCQ, the NNFI = .985 indicating good fit, as the NNFI > .90. The comparative fit index (CFI) is based on non-centrality χ^2, and in the case of the MCQ a CFI = .991 indicating a very good fit. Lastly, the incremental fit index (IFI) includes the scaling factor and yet again indicates good fit with IFI = .991.

The critical sample size statistic (CN) reflects the size of the sample that would have made the minimum fit function χ^2 statistic significant at the .05 significant level. The CN = 131.939 is close to the sample size of 151. It should be noted however, that this proposed sample size ought to be treated with caution (Spangenberg & Theron, 2005).

The average value of the residual matrix (S - Sˆ) is represented by the root mean square residual (RMR = .0184). In turn, the fitted residual divided by the estimated standard errors is represented by the standardised root mean square residual (standardised RMR = .034). A value under .05 on the latter index is regarded as indicative of good fit (Diamantopoulos & Sigauw, 2000). In the case of the MCQ, good fit is therefore indicated as the standardised RMR < .05 at .034. The reason that the standardised RMR is used as opposed to the RMR in interpreting fit, is that complexities can occur in the interpretation of the RMR due to the fact that the magnitude varies with the unit of measurement. The standardised RMR is therefore rather used and interpreted as the standard normal deviate and considered "large" if it is greater than 2.58 in absolute value (Diamantopoulos & Sigauw, 2000).

The relative amount of variances and covariances explained by the model is indicated by the goodness-of-fit index (GFI). In addition, the adjusted goodness-of-fit index (AGFI) and the parsimony goodness-of-fit index (PGFI) indicate the degree to which the reproduced sample covariance matrix recovered the observed sample covariance matrix (Diamantopoulos & Sigauw, 2000). The AGFI overcomes a drawback of the GFI in that it adjusts the GFI in accordance with the degrees of freedom in the model, whereas the PGFI uses model complexity to make adjustments (Diamantopoulos & Sigauw, 2000). The AGFI and PGFI falls between 1 and 0, with values greater than .90 indicating that the data fits the model well. In the case of the measurement model underlying the MCQ, the AGFI = .825 and the PGFI = .456. Although these values are smaller than the desired .90, it nevertheless indicates satisfactory fit in terms of the AGFI and reasonable fit in terms of the PGFI. It should be noted that several researchers recommend that these measures be treated with caution as they tend to be conservative (Kelloway, 1998; Kenny, 2014). Indeed, Diamantopoulos and Sigauw (2000) recommends using the GFI, as it is the most reliable measure of fit. The GFI = .913 in the measurement model, which is above the desired level of .90 and therefore indicates good fit.

The fit statistics of the measurement model underlying the design of the MCQ seems to reflect a model that shows reasonable or good fit, depending on the fit index in question, that clearly outperforms the independent and saturated models.

4.5.3.2 Examination of Residuals

A standardised residual with an absolute value greater than 2.58 would be interpreted as large at 1% significance level (Diamantopoulos & Sigauw, 2000). Large standardised residuals are

an indication of covariance between the indicator variables that the design of the model fails to account for. Large positive residuals indicates a model that can be improved through adding paths to the model, as it reflects a model that underestimates the covariance terms between specific observed variables. In turn, large negative residuals indicates that the paths between indicator variables need to be removed as the model over-estimates the covariance between specific observed variables (Diamantopoulos & Sigauw, 2000).

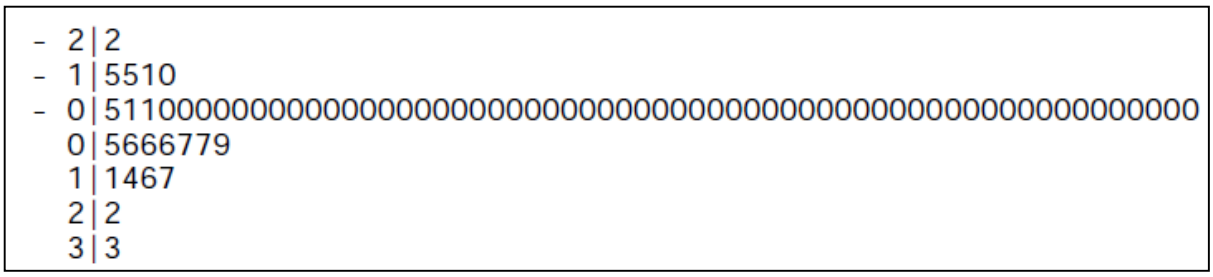


Figure 4.1: Stem and Leaf Plot of the Standardised Residuals

The above Figure 4.1 indicates the smallest (-2.174) and the largest (3.289) standardised residuals. These residuals can be interpreted as z-scores in terms of the standard deviation units deviating from the mean. A residual can be considered large if it exceeds +2.58 or -2.58. In the case of the MCQ measurement model there are no large negative residuals. In addition, only one large positive residual was identified (3.289), which can be expressed as a percentage of the total number of unique elements in the observed covariance matrix: 1/78*100 = 1.28%. This extremely small percentage of the unique variance and covariance terms that are poorly estimated by the fitted measurement model further implies good fit.

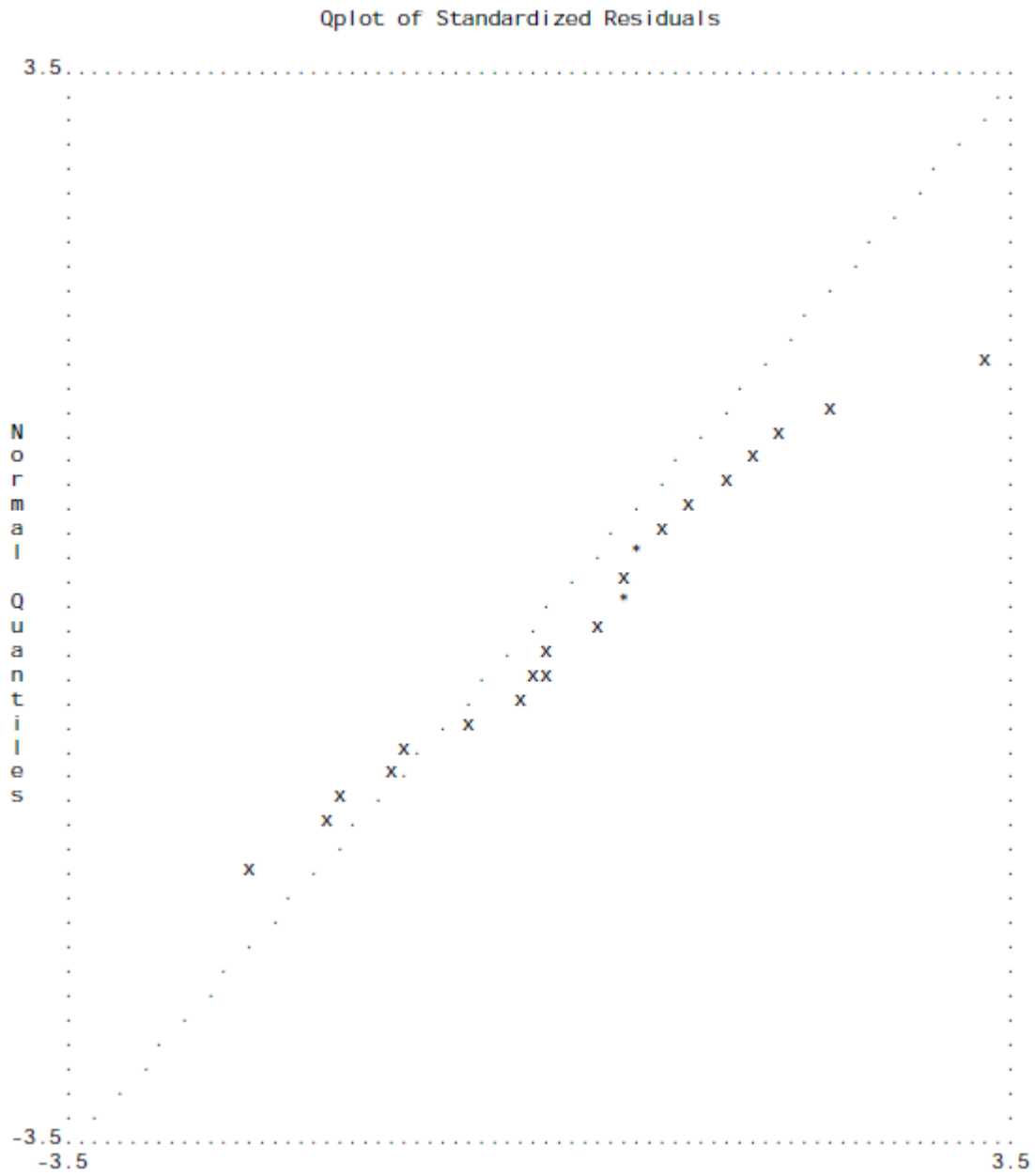


Figure 4.2: Q-Plot of Standardised Residual

As illustrated in Figure 4.2, the Q-Plot further indicates good model fit as there is only one true deviation from the 45˚ - reference line, the same trend as observed in the stem and leaf plot of Figure 4.1.

4.5.3.3 Model Modification Indices

It is known that *a priori* theoretical models frequently do not provide an adequate fit to the data, however, the fit of models can be improved through the following options suggested by Brekler (1990):

1. Changing factor loadings (λ) from fixed to free or vice versa;
2. Allowing for or constraining correlations among measurement errors (δ);
3. Allowing for or constraining correlations among the exogenous latent variables (ξ).

However, it should be noted that it is no guarantee that utilising these three options will lead to improved model fit (Brekler, 1990). In addition, it should also be noted that the adding or removing of explanatory paths should make sense in terms of the underlying theory of the measurement model. The results of the modification model should therefore be interpreted with caution and in conjunction with cross-validation (Cudeck & Browne, 1983).

LISREL calculates the modification indices and estimates the decrease that should be found in the normal theory χ^2 statistic when the current fixed parameters are set free and the model is re-estimated. A rule of thumb commonly used in the structural modelling is that chi-square values exceeding 6.6349 indicates parameters that would statistically significantly improve the fit of the model when they are freed ($p < .01$).

In the case of the MCQ, modification indices calculated for the factor loading matrix (Λ_x) identified two additional paths that will have a significant impact on the model fit. Therefore, 2 out of 46 (4.35%) possible additions to Λ_x will result in an improved fit ($p < .01$) – this small percentage of large modification index comments favourably on the fit of the model. The modification indices calculated for the theta-delta matrix (Θ_δ) also reveals two covariance terms that will improve the model fit significantly ($p < .01$). This small percentage of large modification indices for both the Θ_δ and Λ_x comments favourably on the fit of the model.

The possibility of fitting a secondary model in accordance with the modification indices will be discussed in the following section.

4.5.3.3.1 Evaluating the Possible Secondary Measurement Model

The factor loading matrix of Λ_x is shown in Table 4.35. The chi-square of the suggested path between the first parcel of Leading and Deciding items (indicator variable LDP1) and the latent variable Adapting and Coping is extremely large (1153.576).

Table 4.35

Modification Indices (Λ_x)

	LD	S	ICI	AC	ES	RM
LDP1	-	-	-	**1153.576**	-	2.324
LDP2	-	.000	.079	1.953	.186	.304
SP1	.035	-	2.043	2.447	.023	-
SP2	.006	-	.652	.857	.005	.412
ICIP1	.179	.014	-	1.444	.027	.475
ICIP2	.202	.014	-	1.004	.027	.408
ACP1	-	-	-	-	-	-
ACP2	-	-	-	-	-	-
ESP1	.163	.017	4.081	.786	-	**12.277**
ESP2	.063	.005	1.650	.178	-	.022
RMP1	.094	.025	.038	.130	.018	-
RMP2	.107	.045	.038	.100	.034	-

Upon further investigation of the items in the Leading and Deciding item parcel, it was determined that all items focus on the ability of the mentor to act as a situational leader and thus adapt his/her leadership style in accordance with the needs of the mentee. In turn, the Adapting and Coping subscale attempts to measure the behaviours of the mentor in regards to his/her ability to adapt to, and cope with, the changes that occur within the interpersonal relationship of mentee and mentor. An argument can therefore be made that the underlying trend in the Leading and Deciding items – that of flexibility in the mentor – may be a predictor in the Adapting and Coping competency. This may be due to the wording of the items in question, which perhaps do not emphasise the leadership aspect of the relationship to such an extent as it ought.

A secondary measurement model was therefore tested in LISREL 8.8, which included the additional pathway between the first item parcel of Leading and Deciding and the Adapting and Coping latent variable. The fit statistics of the secondary measurement model can be seen in Table 4.36. The fit statistics indicates that no true improvement in fit has been achieved by the adding the additional pathway in the measurement model. The RMSEA still indicates only reasonable fit (RMSEA $\leq$ .08) with the current value of .0727 being only a marginal

improvement on the RMSEA value of the primary measurement model of .0746 (see Table 4.34 for primary measurement model fit statistics).

Table 4.36

Goodness of Fit Statistics (Secondary Measurement Model)

Goodness of Fit Statistics
Degrees of Freedom = 38
Minimum Fit Function Chi-Square = 83.332 (P = 0.000)
Normal Theory Weighted Least Squares Chi-Square = 80.981 (P = 0.000)
Satorra-Bentler Scaled Chi-Square = 68.104 (P = 0.00193)
Chi-Square Corrected for Non-Normality = 78.494 (P = 0.000123)
Estimated Non-centrality Parameter (NCP) = 30.104
90 Percent Confidence Interval for NCP = (10.878 ; 57.167)
Minimum Fit Function Value = 0.556
Population Discrepancy Function Value (F0) = 0.201
90 Percent Confidence Interval for F0 = (0.0725 ; 0.381)
Root Mean Square Error of Approximation (RMSEA) = 0.0727
90 Percent Confidence Interval for RMSEA = (0.0437 ; 0.100)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0919
Expected Cross-Validation Index (ECVI) = 0.987
90 Percent Confidence Interval for ECVI = (0.859 ; 1.168)
ECVI for Saturated Model = 1.040
ECVI for Independence Model = 24.715
Chi-Square for Independence Model with 66 Degrees of Freedom = 3683.272
Independence AIC = 3707.272
Model AIC = 148.104
Saturated AIC = 156.000
Independence CAIC = 3755.479
Model CAIC = 308.795
Saturated CAIC = 469.348
Normed Fit Index (NFI) = 0.982
Non-Normed Fit Index (NNFI) = 0.986
Parsimony Normed Fit Index (PNFI) = 0.565
Comparative Fit Index (CFI) = 0.992
Incremental Fit Index (IFI) = 0.992
Relative Fit Index (RFI) = 0.968
Critical N (CN) = 135.712

Table 4.36 (Continued)

Goodness of Fit Statistics (Secondary Measurement Model)

Root Mean Square Residual (RMR) = 0.0173
Standardized RMR = 0.0319
Goodness of Fit Index (GFI) = 0.917
Adjusted Goodness of Fit Index (AGFI) = 0.831
Parsimony Goodness of Fit Index (PGFI) = 0.447

The improvement of fit between the secondary and primary measurement models can be said to be negligent at best, it would seem that adding the additional pathway had not created any real improvement in fit – contrary to the extremely large factor loadings (Λ_x) indicated in the modification indices.

As the indicator variable in question – LDP1 – is an item parcel, and additional analysis was run where the three items that comprise the item parcel (LD1, LD3 and LD5) where included in the measurement model as individual indicator variables. This analysis was conducted in order to examine the modification indices of the adapted measurement model to try and determine if an individual item within the item parcel of LDP1 is perhaps responsible for the large chi-square achieved in the factor loadings of the lamda-x matrix (Table 4.35). Thus, a third analysis was attempted in LISREL 8.8 with no item parcel LDP1 as an indicator variable, but rather in its stead, three individual indicator variables of the items LD1, LD3 and LD5. The fit statistics of this analysis can be found in Table 4.37.

Table 4.37

Goodness of Fit Statistics (Individual Items)

Goodness of Fit Statistics
Degrees of Freedom = 62
Minimum Fit Function Chi-Square = 118.668 (P = 0.000)
Normal Theory Weighted Least Squares Chi-Square = 114.263 (P = 0.000)
Satorra-Bentler Scaled Chi-Square = 3.447 (P = 1.000)
Chi-Square Corrected for Non-Normality = 67.579 (P = 0.292)
Estimated Non-centrality Parameter (NCP) = 0.0
90 Percent Confidence Interval for NCP = (0.0 ; 0.0)
Minimum Fit Function Value = 0.791
Population Discrepancy Function Value (F0) = 0.0
90 Percent Confidence Interval for F0 = (0.0 ; 0.0)
Root Mean Square Error of Approximation (RMSEA) = 0.0
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.0)
P-Value for Test of Close Fit (RMSEA < 0.05) = 1.000
Expected Cross-Validation Index (ECVI) = 0.987
90 Percent Confidence Interval for ECVI = (0.987 ; 0.987)
ECVI for Saturated Model = 1.400
ECVI for Independence Model = 27.433
Chi-Square for Independence Model with 91 Degrees of Freedom = 4086.942
Independence AIC = 4114.942
Model AIC = 89.447
Saturated AIC = 210.000
Independence CAIC = 4171.183
Model CAIC = 262.190
Saturated CAIC = 631.814
Normed Fit Index (NFI) = 0.999
Non-Normed Fit Index (NNFI) = 1.022

Table 4.37 (Continued)

Goodness of Fit Statistics (Individual Items)

Parsimony Normed Fit Index (PNFI) = 0.681
Comparative Fit Index (CFI) = 1.000
Incremental Fit Index (IFI) = 1.015
Relative Fit Index (RFI) = 0.999
Critical N (CN) = 3952.329
Root Mean Square Residual (RMR) = 0.0219
Standardized RMR = 0.0390
Goodness of Fit Index (GFI) = 0.902
Adjusted Goodness of Fit Index (AGFI) = 0.834
Parsimony Goodness of Fit Index (PGFI) = 0.533

The result of the analysis was extremely surprising, as an exact fit was now found (RMSEA = 0.000). Within structural equation modelling, the possibility of achieving exact fit when analysing data from a real-world sample is such a rarity that the opposite conclusion of imperfection in the data is reached – as opposed to the perfection of fit that is indicated by the RMSEA value. Thus, the above fit statistics is distrusted precisely because of the exact fit indicated by the RMSEA value. In addition, the large difference between Normal Weighted Theory Chi-Square and the Satorra Bentler Chi Square was most perplexing. The attempt to so to say 'smoke out the culprit' within the item parcel by isolating the items seems to have failed.

As no true improvement was found in the secondary measurement model and all further attempts to improve fit by isolating items in item parcels have been thwarted, all further analysis will occur based on the primary measurement model.

4.5.3 Evaluation on the First-Order Factor Model

The unstandardized factor loading matrix (Λ_x) reflects the slope of the regression of the unstandardized item parcels X_j on the unstandardized latent competency dimension ε_j.

Table 4.38

Unstandardized Factor Loading Matrix

	LD	S	ICI	AC	ES	RM
LDP1	.427	-	-	-	-	-
	(.038)					
	11.133					
LDP2	.575	-	-	-	-	-
	(.051)					
	11.263					
SP1	-	.695	-	-	-	-
		(.049)				
		14.055				
SP2	-	.503	-	-	-	-
		(.042)				
		11.947				
ICIP1	-	-	.597	-	-	-
			(.047)			
			12.802			
ICIP2	-	-	.733	-	-	-
			(.048)			
			15.351			
ACP1	-	-	-	.529	-	-
				(.047)		
				11.281		
ACP2	-	-	-	.454	-	-
				(.040)		
				11.238		
ESP1	-	-	-	-	.677	-
					(.054)	
					12.570	
ESP2	-	-	-	-	.512	-
					(.047)	
					10.848	

Table 4.38 (Continued)

Unstandardised Factor Loading Matrix

RMP1	-	-	-	-	-	.485
						(.046)
						10.471
RMP2	-	-	-	-	-	.574
						(.053)
						10.790

Note. The top value indicates the unstandardized λ_{ij} estimate, second value indicates the standard error of λ_{ij} and the third value the test statistic z.

Table 4.38 indicates the unstandardized factor loadings matrix that was used to determine the statistical significance of the first order factor loadings hypothesised by the proposed measurement model of the MCQ. Table 4.38 indicates that the freed first-order factor loadings are significant for all of the twelve indicator variables ($p < .05$). Thus, all of the twelve null hypotheses (H_{0i}: $\lambda_{jk} = 0$; i = 3, 4, …14; j = 1, 2, …12; k = 1, 2, …6) can be rejected in favour of the alternate hypotheses (H_{0i}: $\lambda_{jk} \neq 0$; i = 3, 4, …14; j = 1, 2, …12; k = 1, 2, …6). Therefore, item parcels can be said to reflect the performance dimension they were intended to measure.

In turn, the completely standardised factor loading matrix (Λ_x) reflects the slope of regression of the standardised item parcels X_j on the standardised latent competency dimensions (ε_j).

Table 4.39

Completely Standardised Factor Loading Matrix

	LD	S	ICI	AC	ES	RM
LDP1	.757	-	-	-	-	-
LDP2	.778	-	-	-	-	-
SP1	-	.838	-	-	-	-
SP2	-	.813	-	-	-	-
ICIP1	-	-	.811	-	-	-
ICIP2	-	-	.892	-	-	-
ACP1	-	-	-	.810	-	-
ACP2	-	-	-	.832	-	-
ESP1	-	-	-	-	.774	-
ESP2	-	-	-	-	.777	-
RMP1	-	-	-	-	-	**.696**
RMP2	-	-	-	-	-	.759

Table 4.39 indicates the completely standardised factor loading matrix that was used to determine the magnitude of the first-order factor loadings hypothesised by the design of the MCQ. Hair *et al.* (2006) proposes a critical cut-off value of .71 for the factor loadings matrix. In the case of the MCQ, the majority of items was found to have factor loadings well above the cut-off point. The exception is item parcel RMP1 (.696), although this item parcel has a value above .60, indicating that it still represents the latent mentorship dimension acceptably well[7].

[7] It should be noted that although the item parcels load well on each of the mentorship dimensions they were meant to represent, it does not by any means confirm that all items comprising the parcel also represent the latent variable equally well. It is an unfortunate drawback of parcelling that poor items can be hidden in the item parcel. This effect may be minimised due to the small number of items in each parcel, however, it still remains as a limitation that presents a truly confident verdict being reached with regards to the success of the individual items in the MCQ in measuring the specific latent mentoring dimension.

The R^2 values for the item parcels indicate the squared multiple regression when regressing the standardised item parcel on the standardised latent variable that it is meant to represent.

Table 4.40

Squared Multiple Correlations for Item Parcels

Squared Multiple Correlations for X-Variables					
LDP1	LDP2	SP1	SP2	ICIP1	ICIP2
.574	.606	.702	.660	.657	.795
Squared Multiple Correlations for X-Variables					
ACP1	ACP2	ESP1	ESP2	RMP1	RMP2
.655	.693	.600	.603	**.485**	.577

The R^2 values shown in the above Table 4.40 reflects the proportion of the variance in the item parcel that can be explained in terms of the variance in the latent variable it was meant to reflect. Spangenberg and Theron (2005) have identified three possible reasons as to the total variance in the i^{th} item parcel (Xi): 1) Variance in the latent variable that the item was earmarked to reflect (ε_j); 2) Variance due to the variance in the other systematic latent efforts the item parcels was not designed to reflect; 3) Variance due to random measurement error.

Table 4.40 indicates that the majority of items explained more than 50% of the variance in the item parcel. The single exception was item RMP1, which reflected 48.5% of the variance. This finding is not surprising as Hair et al's (2006) critical factor loading of .71 implies a critical R^2 value of .50 – therefore problematic items in terms of the factor loadings will inevitably be problematic in terms of the R^2. However, again item parcel RMP1 just misses the critical cut-off and can therefore be said to reflect a reasonable amount of variance.

Table 4.41

Unstandardised Measurement Error Variances

Theta-Delta					
LDP1	LDP2	SP1	SP2	ICIP1	ICIP2
.135	.215	.205	.130	.186	.138
(.021)	(.042)	(.034)	(.023)	(.026)	(.033)
6.419	5.094	6.095	5.725	7.051	4.143
Theta Delta					
ACP1	ACP2	ESP1	ESP2	RMP1	RMP2
.147	.091	.306	.172	.250	.242
(.022)	(.016)	(.051)	(.029)	(.035)	(.035)
6.695	5.555	5.960	6.046	7.071	6.837

Note. The top value represents the unstandardized $\Theta_{\delta j}$ estimate, the second value the standardised error of $\Theta_{\delta j}$ and the third value the test statistic z.

Table 4.42

Completely Standardised Measurement Error Variances

Theta-Delta					
LDP1	LDP2	SP1	SP2	ICIP1	ICIP2
.426	.394	.298	.340	.343	.205
Theta Delta					
ACP1	ACP2	ESP1	ESP2	RMP1	RMP2
.345	.307	.400	.397	.515	.423

Tables 4.41 and 4.42 indicated the unstandardized and completely standardised measurement error variance in turn. Table 4.42 indicates that the majority of items have measurement error variances that are satisfactorily small. Nine of the twelve indicator variables indicated measurement error variance of less than 40%. However, item LDP1, RMP1 and RMP2 are problematic in the sense that measurement error accounts for too large a percentage of the item parcel variance.

Table 4.43

Phi Matrix

	LD	S	ICI	AC	ES	RM
LD	1.000	-	-	-	-	-
S	.987	1.000	-	-	-	-
	(.046)					
	21.416					
ICI	.957	.922	1.000	-	-	-
	(.042)	(.039)				
	22.913	23.929				
AC	.946	.920	.831	1.000	-	-
	(.048)	(.041)	(.051)			
	19.561	22.493	16.210			
ES	.974	1.006	.932	.923	1.000	-
	(.049)	(.043)	(.047)	(.053)		
	19.839	23.636	19.947	17.280		
RM	1.050	1.069	.929	.854	1.095	1.000
	(.057)	(.054)	(.057)	(.061)	(.050)	
	18.492	19.751	16.291	13.953	21.807	

Note. Top value represents the unstandardized φ_{ij} estimate, second value represents the standard error of φ_{ij} and the third value represents the test statistic z.

The six mentorship competencies of the MCQ are expected to correlate to a certain extent, however as these dimensions are meant to represent six distinct mentor competencies, these correlations should not be excessively high. Table 4.43 indicates the latent variable inter-correlations in the phi-matrix. All twelve latent variables were found to correlate statistically significantly with each other ($p < .05$). The statistical hypotheses (H_{0i}: $\Phi_{jk} = 0$; i = 27, 28,…

41; j = 1, 2,… 6; k = 1, 2,… 6) can therefore be rejected for the item parcels. Furthermore, correlations are considered to be excessively high if they exceed a value of .90 for the purpose of this study. If judged by this criterion the majority of the correlations in the phi matrix are therefore excessively high.

4.5.4 Discriminant Validity

The excessively high correlations between the latent variables in the phi matrix are strong evidence of the lack of discriminant validity. This creates the possibility that the mentorship dimensions might correlate unity in the parameter but correlate less that unity in the statistic because of sampling error.

A method of identifying problems with regard to discriminant validity concerns the use of an Excel macro developed by Scientific Software International (Mels, 2009). The Excel macro calculates the 95% confidence interval for Φ_{ij}. The logic underlying this method is that if the 95% confidence intervals include unity it suggests that the correlation between those two latent variables could be unity in the parameter. Therefore, if any confidence interval includes the value 1 it would imply that the null hypothesis (H_0: $\rho = 1$) cannot be rejected.

Table 4.44

95% Confidence Interval for Sample Estimates

	LD	S	ICI	AC	ES	RM
LD	-					
S	-.751 - 1.000	-				
ICI	.731 - .994	.798 - .971	-			
AC	.715 - .991	.788 - .971	.701 - .908	-		
ES	.285 - .999	1.000 – (-1.000)	.750 - .983	.720 - .981	-	
RM	1.006 – 1.550	1.015 – 1.344	.683 - .986	.680 - .937	1.034 – 1.276	-

Note. $\Phi_{ij} > AVE_i$ and AVE_j $\Phi_{ij} > AVE_i$ and AVE_j

Table 4.44 illustrates the 95% confidence intervals for the 15 inter-latent variable correlations. Five of the confidence intervals include unity and all of the confidence intervals includes the value (.90) earlier considered to be a critical value for excessively large correlations. This finding results in the discriminant validity of the MCQ dimension measures being seriously compromised. Questions therefore arise as to if the latent variables in the MCQ are indeed measuring separate constructs.

Table 4.45

Squared sample phi estimates and average variance extracted per latent variable.

	LD	S	ICI	AC	ES	RM	AVE
LD	-						.58965
S	.974	-					.68119
ICI	.915	.850	-				.72619
AC	.895	.846	.691	-			.67405
ES	.949	1.012	.869	.852	-		.60146
RM	1.103	1.142	.863	.729	1.199	-	.53065
AVE	.58965	.68119	.72619	.67405	.60146	.53065	-

Note. $\Phi_{ij} > AVE_i$ and AVE_j $\Phi_{ij} > AVE_i$ and AVE_j

Farrell (2010) presented the strongest test of discriminant validity, whereby the average variance extracted should be greater than .50 and should be greater than the squared correlation between the latent variables. The average variance extracted (AVE) reflects the average proportion of variance in the indicator variables that is accounted for by the latent variable that the indicator variables were tasked to represent (Diamantopoulos & Sigauw, 2000). The following arguments for the proposed test of discriminant validity are posed by Farrell (2010):

1. The latent variable should account for more variance in the indicators that represent them than measurement error does.
2. Latent variables should account for more variance in the indicator variables that represent them than they account for each other.

In the case of the MCQ, two item parcels where used to represent each latent competency dimension. The squared correlations between the latent competency dimensions as well as the average variance extracted for each latent competency dimension are shown in Table 4.45. The AVE for the j^{th} latent variable is calculated as $\rho vj = AVEj = (\Sigma\lambda^2_{ij})/ (\Sigma\lambda^2_{ij} = \Sigma\Theta_{\delta ij})$.

In Table 4.45 above, none of the squared inter-latent variable correlations were smaller than both the AVE values associated with the latent variable pair being correlated. One of the squared inter-latent variable correlations was smaller than one of the AVE values associated with one of the latent variables in the pair of variables being correlated (as indicated on Table

4.45 in blue). However, fourteen of the squared inter-latent variable correlations (93.33%) are larger than both the AVE values associated with the latent variable pairs being correlated.

This finding therefore confirms that the discriminant validity of the MCQ is seriously compromised. The correlation unity found for five of the latent mentorship competencies essentially means that they measure the same thing. It is a distinct possibility that the latent variables are not qualitatively distinct, as the magnitude of correlations (Table 4.43) and the magnitude of the coefficients of determination (Table 4.45) implies that in the majority of cases no distinction can be found in the latent variable being measured. This finding is indeed a seriously negative reflection of the measurement model in question, and stands in contrast to the reasonable to good fit indices found in previous sections.

4.5.5 Power Assessment

In section 4.5.3, the RMSEA of the MCQ measurement model was evaluated and subsequently, the close fit null hypothesis was not rejected (RMSEA $\leq$ .05). The observed population covariance matrix (Σ) could therefore be assumed to closely approximate the reproduced population covariance ($\Sigma\hat{}$) matrix derived from the model parameters. A question arises as to whether the decision is not rejecting H_{02} was the correct one.

This question of the possibility that the rejection of H_{02} may have been a mistake is of importance in the case of the MCQ, as a decrease in sample size lowers the statistical power of the analysis. The MCQ had several complications regarding sample size, with the final sample totalling 151. If a decision regarding whether or not to reject the null hypothesis of reasonable fit happens with a decreased sample size, and a resultant lower statistical power, the uncertainty increases and therefore confidence in the evidence decreases. In cases of low statistical power it is not clear if the decision not to reject H_{02} was perhaps due to the insensitivity of the test to distinguish specification errors in the model, or if it is due to an accurate model. In testing a model's fit, there are two types of errors that are of consequence. Type I errors refers to rejecting a correct model and Type II errors refers to not rejecting an incorrect model (Diamantopoulos & Sigauw, 2000). In the application of the chi-square test, Type I errors have been taken into account by capturing the probability that a correct model has been rejected by the significance level. Type II errors, in turn, are taken into account through the equation 1-β, where β represents the probability of not rejecting an incorrect model (Diamantopoulos & Sigauw, 2000). The equation (1 – β) therefore indicates the power of the test and comments on the likelihood of rejecting a false null hypothesis. The power

associated with the test of close fit was evaluated. The close fit null hypothesis (RMSEA ≤ .05) implies that the model has a close, yet imperfect fit in the population. The close fit null hypothesis (H_{02}: RMSEA ≤ .05) was tested against the alternate hypothesis (H_{a2}: RMSEA > .05). A specified value for the parameter needs to be assumed under H_{a2} when determining the test of close fit null hypothesis. The RMSEA = .08 was used as RMSEA is usually regarded as the upper limit of satisfactory fit.

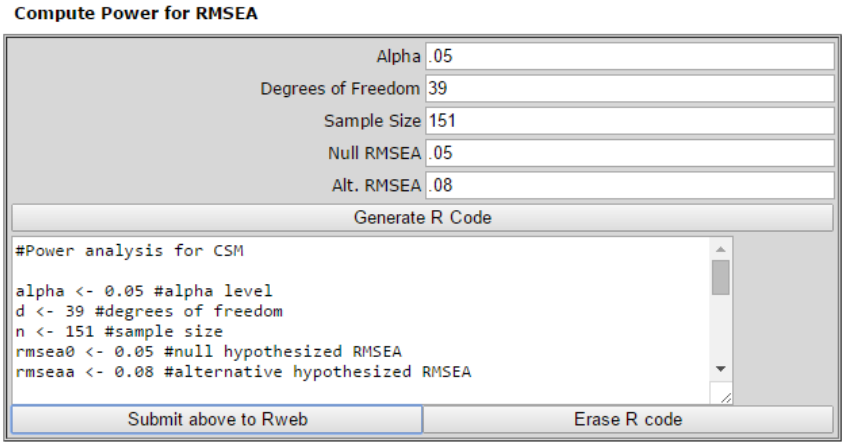


Figure 4.3: Power Assessment (Preacher & Coffman, 2006)

The above Figure 4.3 indicates the syntax developed by Preacher and Coffman (2006) that was utilised to determine the statistical power of reasonable fit. The degrees of freedom was calculated as: (v = ½[p][p + 1] – t) = 78 – 39 = 39. The significance level of .05 was specified, a sample size of 151, and RMSEA was set to .05 under H_0 and .08 under H_a. The Preacher and Coffman (2006) software returned a power value of .538066, which is indeed a very low as a power value of .80 would have been desired. The low power assessment does not bolster confidence in the decision to not reject the measurement model.

4.5.6 Model Re-Specification

The fitting of the measurement model in the current chapter has been somewhat perplexing. The exact fit null hypothesis had to be rejected in favour of the close fit null hypotheses (H_{02}) – which was to be expected. As discussed earlier, it is possible to improve the fit of the model by freeing or constraining certain paths in order achieve a more parsimonious fit of the model.

In section 4.5.3.3 it was stated that the chi-square values of the factor loading matrix (Λ_x) and the theta-delta matrix (Θ_δ) both indicated two parameters with a chi-square exceeding 6.6349 which would statistically significantly improve the fit of the model if freed. The first such

factor loading was found between the first parcel of the Empathy and Sensitivity dimension (ESP1) and the Role-Modelling competency. The second factor loading was between the first parcel of the Leading and Deciding dimension (LDP1) and the Adapting and Coping competency.

When assessing the possibility of adding or removing paths in the measurement model it is important that any changes can be justifiably explained according to the underlying theory, any modifications ought to be approached with caution and in conjunction with cross-validation (Brekler, 1990). The underlying theory of the MCQ lies in the structural model developed to explain the development of competency potentials in a mentee due to the competencies of a mentor. The structural model as outlined in section 2.7 does not include hypothesised paths between Empathy and Sensitivity and Role-Modelling, nor between Leading and Deciding and Adapting and Coping, as no such theoretical link could be found in terms of youth mentoring.

In addition, in both cases where factor loadings suggested additional paths, the paths were suggested for only one item parcel, i.e. the suggested path between the Empathy and Sensitivity parcel one and Role-Modelling indicates a statistically significant improvement in fit should the factor loading be freed, but no such indication could be found in the second parcel of Empathy and Sensitivity. Should a causal relationship between the two competency dimensions exist, one would expect both item parcels to have factor loadings above the 6.6349 mark. However, this was not the case in either of the suggested additional pathways.

As there are no theoretical grounds to freeing the factor loadings of these two paths and the majority of the factor loadings of the items representing the competency dimensions did not suggest the necessity of adding additional pathways the measurement model will stay as is. Future changes in the measurement model and the underlying structural model may be undertaken with additional theoretical insights.

4.5.7 Conclusion

Chapter four evaluated the psychometric properties of the Mentor Competencies Questionnaire (MCQ) to determine the construct validity of the instrument. The substantive hypothesis tested in this study is that the MCQ provides a construct valid and reliable measure of youth mentor competencies in the context of a Rachel's Angels.

The operational hypothesis implied by the substantive research hypothesis is that the measurement model can closely reproduce the covariance observed between the item parcels formed from the items of the various subscales. The operational hypothesis implied by the substantive research hypothesis further implies several properties that the MCQ ought to possess:

- The factor loadings of the item parcels of the item parcels on the mentoring dimensions are statistically significantly small;
- The measurement error variances related to each parcel are significantly small;
- The latent mentoring competencies explain large proportions of the variance in the item parcels;
- The latent mentoring competencies correlate low/moderately with each other;
- The 95% confidence interval for the latent mentoring competencies correlation do not contain 1;
- The average variances extracted (AVE) by the item parcels of each latent mentoring competencies larger than the squared correlations between the latent mentorship competencies.

Multiple fit indices offered by LISREL 8.8 were used to test model fit. The results indicated a close fit of the measurement model as the close fit null hypothesis was not rejected (H_{02}). The basket of LISREL fit indices indicated reasonable to good model fit of the sample, depending on the index in question. The majority of fit statistics indicated good fit and the small percentage of large standardised covariance residuals corroborated this conclusion.

Two large modification indices calculated for the Λ_x and Θ_δ matrices were examined and did not seem to significantly improve the fit of the model if included. The small percentage of large modification indices further comments favourably on the fit of the model. The factor loadings on the item parcels on the designed latent mentor competency dimensions were statistically significant. However, problems were detected in the mediocre amount of variance explained by the latent mentorship competencies in the parcels that represents them. Additionally, the discriminant validity of the measurement model was entirely discredited. The latent mentorship competencies correlated excessively with each other in the sample. The confidence intervals calculated for the latent mentoring competencies correlations reached unity by containing 1. Thus, the unique aspects of the latent variables have not been adequately measured.

The findings of the data analysis points towards a review of the items in the MCQ, as the need to reassess the items that are meant to represent the mentoring competencies are not adequately distinguishing between the different mentoring competencies.

5. RECOMMENDATIONS AND CONCLUSIONS

5.1 INTRODUCTION

The objectives of this study were (a) to identify the necessary mentor competencies and mentee competency potentials that would explain the youth mentoring process in terms of Rachel's Angels, (b) to develop a Mentor Competency Questionnaire (MCQ) in order to psychometrically evaluate the mentors of Rachel's Angels in terms of the mentor competencies identified in the literature study, and (c) to validate the MCQ by evaluating the fit of the measurement model implied by the design of the instrument and the constitutive definition of the generic performance construct.

This final chapter offers a summary of the results of this study in regards to the objectives mentioned above. In addition, the implications and limitations are discussed along with recommendations for future research.

5.2 SUMMARY OF PRINCIPAL FINDINGS AND DISCUSSION

The research findings in the literature study identified six possible mentee competency potentials and six possible mentor competencies, all of which was hypothetically linked in the Mentor Competency Model. Each of the mentor competencies were defined and narrowed to represent a specific competency construct. The Mentor Competency Questionnaire was in turn developed in order to provide a measure for each of the six mentor competencies.

The measurement model implied by the design of the MCQ was fitted to the data collected from Rachel's Angels mentors and mentee's. Item parcels were used in fitting the data due to the restrictions imposed by the small sample size. Exploratory factor analysis and item analysis was performed on each subscale in order to evaluate whether the items comprised each subscale successfully measure the intended latent mentor competency dimension and whether each subset of items provides a unidimensional measure of the latent mentor competency dimension that it was intended to measure.

The following conclusions were therefore made in regards to the dimensionality analysis, item analysis, and fit of the measurement model.

5.2.1 Item Analysis

Each of the six subscales reflecting a mentor competency in the Mentor Competency Questionnaire were represented by six items each. These items designed to act as a stimuli to which mentors and mentee's of Rachel's Angels would respond – with this response interpreted as an expression of behaviour specific to an underlying mentor competency. The ideal desire would be for high correlations to exist between items, high item-total correlations, high squared multiple correlations when regressing each item on a weighted linear composite of the other items in the subscale, and a high internal consistency reliability for the subscale that will decrease when any item is deleted from the subscale.

The item analysis involved the identification of poor items through the use of item statistics, which were used to determine whether the items in a subscale represents the underlying mentor competency. Poor items were identified as those items which fail to discriminate between the different states of the latent variable. All of the subscales reflected high alpha coefficients well above .70. Several marginally problematic items were detected, but no item deletion would have resulted in an improved Cronbach's alpha. Thus, no items were deleted from the MCQ based on the totality of evidence provided by the item analysis.

5.2.2 Dimensionality Analysis

Principal factor analysis with oblique rotation was performed on each of the six subscales of the Mentor Competency Questionnaire. The assumption that each of the mentor competency dimensions is a unidimensional construct was subsequently evaluated. In addition, the degree to which each item measures the specific mentor competency dimension that it was intended to measure. The factor loadings of each item were used to determine the degree to which the item reflects the underlying mentor competency dimension.

The eigenvalue-greater-than-one rule of thumb was used to determine the number of factors to extract. Four of the subscales (Leading and Deciding; Supporting; Empathy and Sensitivity; Role-Modelling) passed the unidimensionality test. However, the two remaining subscales (Adapting and Coping; Initiating, Communicating and Interacting) failed the unidimensionality test in that two factors with eigenvalues greater than one were extracted. The factor fission of these two subscales was, however, the result of the original conceptualisation of the mentor competencies which were designed to be broad groupings of ideal mentorship behaviours.

The Initiating, Communicating and Interacting (ICI) subscale indicated satisfactory factor loadings when a single factor loading was forced. Subsequently, it can be concluded that the ICI-subscale reflects the original mentor competency dimension. The subscale was therefore not modified based on the feedback obtained from the exploratory factor analysis.

The majority of items in the Adapting and Coping subscale reflected satisfactory factor loadings in the two factor solution, with the exception of items AC1. In the forcing of a single factor it was yet again determined that item AC1 reflected a problematically low factor loading. The item itself was deemed highly problematic and thusly removed from the subscale. The number of items in the Adapting and Coping subscale was therefore reduced from six to five items. An additional factor analysis was run and after the forcing of a single factor, satisfactory factor loadings were found for all items in the subscale.

It should be noted that the extraction of a single factor and having each item load reasonably high on the single factor that allows the accurate reproduction of the observed inter-item correlation matrix does not necessarily imply that the target latent mentor competency dimension carrying a specific constitutive definition has been successfully measured. It does, however, imply that the hypothesis that items in the specific subscale all successfully measure the target latent mentor competency dimension has survived an attempt to be falsified. Thus, the items of four of the six subscales of the Mentor Competency Questionnaire measures the mentoring competency that it intends to measure according to the exploratory factor analysis.

5.2.3 Measurement Model Fit

The hypotheses of exact fit was rejected, with the hypothesis of close fit not rejected (H_{02}: RMSEA $\leq$ .05; p>.05). The fit indices provided by LISREL 8.8 further supported the notion of close fit by in turn indicating either close or reasonable fit depending on the severity of the index. This finding was supported by the small percentage of large standardised covariance residuals and the small percentage of significant $\boldsymbol{\Lambda^X}$ and $\boldsymbol{\Theta_\delta}$ modification indices found. However, severe problems were detected in the discriminant validity of the measurement model, as it cannot be concluded that the latent variables are quantitatively distinct.

The measurement model therefore provides a somewhat valid description of the psychological process underlying the MCQ in that the model with its parameter estimates was able to reasonably reproduce the observed covariance matrix.

5.3 LIMITATIONS

The sample size obtained from the mentors and mentee's of Rachel's Angels was not satisfactory in terms of the statistical power – even after the method of parcelling was used. A larger sample is therefore desired and required in order to ensure that the data analysis occurred at an acceptable level of statistical power. This small sample size made the use of item parcelling a necessity, whereas a more desirable course of action would have been to use individual items to represent each of the mentor competencies instead of the two item parcels per latent variable as was used in this study. Thus, the question of whether or not the MCQ provides a valid measure of the mentor competence of a Rachel's Angels mentor can only be satisfactorily answered when each of the latent mentor competency dimensions are represented by the individual items in each subscale of the MCQ.

The mentor competency construct has a connotative meaning that lies in the internal structure of the construct. However, as the competencies were defined in accordance with a larger Mentor Competency Model – which contains the mentor competencies and mentee competency potentials in order to explain the mentorship process – the construct of mentor competence is embedded in a larger nomological network of constructs. Evaluating the construct validity of the MCQ would mean evaluating whether the instrument successfully measures the mentor competency construct as constitutively defined. The evaluation of the construct validity of the MCQ by fitting the measurement model implied by a constitutive definition of the mentor competence construct together with the design of the instrument only succeeds in evaluating the construct validity from the perspective of the internal structure of the instrument. Conclusive evidence that the MCQ measures the mentor competence construct as constitutively defined can only be obtained by also showing that a structural model reflecting the manner in which the six latent mentor competency dimensions are embedded in a larger nomological network fits the data closely.

The MCQ was developed in order to have two versions, a self-rater which mentors of the Rachel's Angels programme completes and an other-rater version that a mentee of the mentoring programme completes in order to rate their mentor. The use of self-rater questionnaires runs the risk of skewed data due to social desirability. Social desirability refers to the risk that respondents may be tempted to manipulate answers in order to create a more favourable impression (Elmes, Kantowitz, & Roediger, 2003). This attempt by respondents to manipulate the answers of the questionnaire can result in data that does not reflect respondents actual experiences, but rather their perception of what these experiences should

be. In terms of the MCQ, this would imply that mentors respond to the items in the questionnaire in such a way that reflects not their true behaviour regarding mentor competencies but what they think the desired behaviour in terms of what a mentor competency ought to be. There is therefore a very likely possibility that mentors rated themselves higher on mentoring constructs in the questionnaire than their true standing. The impact of self-rater bias negatively affecting the data is limited by the small sample size of mentors used in this study, as the majority of the sample consisted of mentee's. Indeed, only 19.87% of the sample consisted of self-rater questionnaires completed by mentors.

An additional limitation was communicated to the researcher by the sample group of Rachel's Angels mentee's. The Mentor Competency Questionnaire consists of items in the form of statements, where the respondent indicates their agreement or disagreement with the statement on a 5-point Likert-type scale. Respondents informally communicated that the response range of five options (strongly agree/agree/neutral/disagree/strongly disagree) was limiting in truly communicating the behaviour of the mentor. Consequently, a 7-point Likert scale may have been more useful in truly capturing the true standing of mentors on mentor competency dimensions.

Lastly, the fact that the current study is specifically targeted towards the Rachel's Angels youth mentoring programme ought to be taken into account as a limitation. The Mentor Competency Model and the subsequent Mentor Competency Questionnaire were both developed by researching specific competencies and competency potentials that would address the outcomes of the Rachel's Angels programme. The applicability of the study is therefore limited and interpretations of the findings of the study as being applicable to youth mentoring as a whole ought to be approached with caution.

The above limitations ought to be taken into account and an attempt made at avoiding it in future studies. However, the limitations of the study as mentioned above does not hinder the findings of the study in such a way as to inhibit the contribution made to the field of youth mentoring in the South African context.

5.4 RECOMMENDATIONS FOR FUTURE STUDY

5.4.1 Recommendations Regarding the Mentor Competency Questionnaire

The MCQ was designed with the intention to develop a measure which would evaluate the standing of a Rachel's Angels mentor on six mentor competencies. The aim of the study was to evaluate the MCQ psychometrically as a measure of mentor competence and to determine whether or not the design intention of the measure succeeded. The ideal would have been to fit the measurement model in which the individual items serve as indicator variables of the latent mentor competency dimensions, however due to small sample sizes, item parcelling was used in this study. A future recommendation would therefore be to repeat the study with a larger sample in order to reach a more definitive conclusion regarding whether or not the design intention of the MCQ succeeded.

Severe problems were encountered regarding the discriminant validity of the MCQ. It was found that the latent variables were not sufficiently qualitatively distinct. If a future study encounters similar problems with the discriminant validity of the MCQ whilst using individual items as indicator variables as opposed to item parcels, serious action needs to be taken. One possibility would be to reduce the number of latent mentor competency dimensions by combining the dimensions through the use of exploratory factor analysis – which would minimise the correlations between the mentor competency dimensions. Alternatively, the validity and reliability of the items in the MCQ could be improved through the reassessment and rewording of the items – which would improve the factor loadings of items on latent variables. A further approach would also be to inspect the modification indices calculated to fit Λ_x when the measurement model is fitted with the individual items as indicator variables to identify items that tend to cross-load on latent mentor competency dimensions – these items should then be removed from the instrument.

As mentioned in the limitations subsection (see section 5.3), several mentee's of Rachel's Angels who formed part of the sample group indicates that a 5-point Likert-type scale did not give a sufficient range in order to truly indicate the complex behaviours of the mentor in regards to showing the necessary competence. It is therefore recommended that future studies using the MCQ rather implement a 7-point Likert scale with a wider range of options.

Lastly, the Adapting and Coping subscale of the MCQ proved to be somewhat problematic in both the item analysis and dimensionality analysis conducted in Chapter 4. Future research ought to be centred round reassessing the Adapting and Coping subscale from its construct definition, to the items representing the mentor competency construct. The item (AC1) deleted in the dimensionality analysis ought to also be further examined in terms of possible rewording or the removal of the item altogether.

5.4.2 Recommendations Regarding Future Research

The Mentor Competency Questionnaire should be seen as the first drop in the bucket regarding research into youth mentorship within the South African context. The current study focusses solely on the Rachel's Angels mentorship, further research studies that includes a wider array of youth mentorship programmes across South Africa will provide valuable insight into youth mentorship as a whole.

No other study regarding the competencies of mentors and the competency potentials of mentees could be found within the context of the U.K. definition of competencies as 'bundles of behaviour'. As such, the proposed research is a maiden study within the field of youth mentorship in an effort to understand the greater behavioural influences within the youth mentoring relationship.

The current study attempts to create a competency model with only mentor competencies and mentee competency potentials interlinked. This model was developed theoretically with a firm basis in the theory surrounding previous competency and competency potential research. The model itself was not be empirically tested in this study, but the development of the MCQ creates a much needed assessment in order to completely test the Mentor Competency Model in future.

The measurement model and development of the MCQ should be seen as a puzzle piece in a much greater model depicting the entire mentorship process. The structural model needs to be empirically tested and further research is needed to determine the competency potentials influencing mentor competencies, which would provide valuable insight in the future recruitment and selection of mentors within the Rachel's Angels programme. In addition, research regarding the competencies of mentees themselves as well as the greater outcomes of the Rachel's Angels programme is needed. The links between the mentee competencies and final academic success needs to be established in order to ensure that the programme

does in fact achieve its end goal of affecting the academic achievement of the learners. If all of the above research is completed, an understanding of the entire process of mentorship within Rachel's Angels can be achieved, and can be illustrated as following:

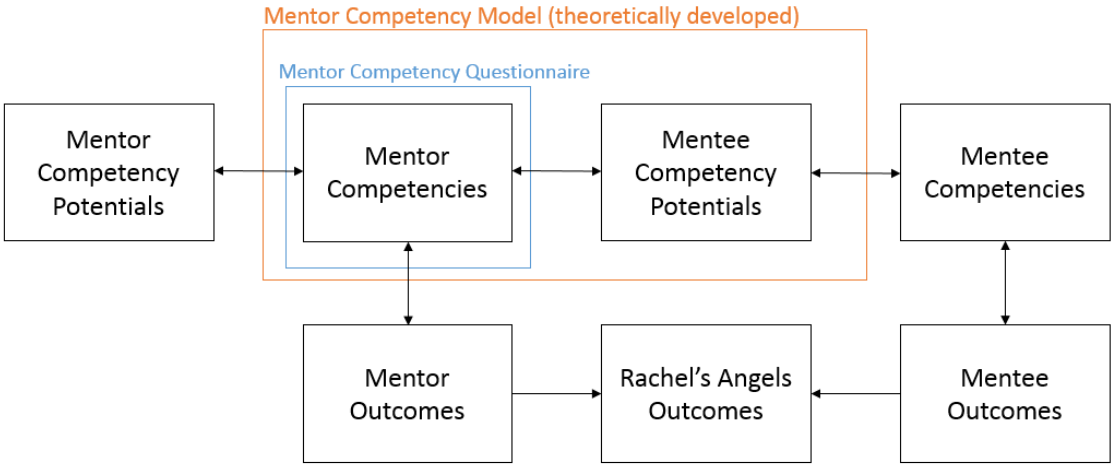


Figure 5.1 Future Research in Youth Mentoring

The above depiction in Figure 5.1 illustrates that at least four further studies are needed within the current field of study. Firstly, the Mentor Competency Model needs to be empirically tested, secondly the relationships between mentor competencies and mentor competency potentials should be examined. If, as expected, the current competencies prove to be statistically significant an extended study is needed to link mentor competency potentials in order to further identify the profile of the ideal mentor. Thirdly, the linkages between mentee competency potentials and mentee competencies need to be further explored, as it will provide an explanation as to what competencies within the mentee is needed in order to achieve certain outcomes and to function successfully within a mentor-mentee relationship. Lastly, further research is needed in order to link mentee competencies with the outcomes of the mentoring programme – which will provide evidence as to the success and impact of the programme on the lives of mentee's and demonstrate what competencies needs to be developed within the mentee's in order to achieve said outcomes. Each of the above studies will combine into a complete understanding of mentorship within Rachel's Angels in terms of competency modelling.

Future research within the context of competencies in youth mentoring could easily be extended to other youth programmes, nationally and internationally. The inclusion of more youth mentorship programmes will lend credence to results and create universal findings within the sphere of youth mentorship. Knowledge accumulated by the current study and any

future studies can therefore be adapted and used by any youth mentorship programme worldwide, in an attempt to intensify and widen the positive impact of the affirmative development.

5.4.3 Practical Recommendations and Implications

The proposed study will have several practical implications for the Rachel's Angels youth mentoring programme and the recommended further studies outlined above will have several additional implications for the everyday functioning of the programme which may lead to the maximisation of the outcomes.

The mentor competencies will provide a blueprint of the bundles of behaviours that an ideal mentor would need to possess in order to function effectively. As such it is possible to use the mentor competencies as defined in the study as a selection and recruitment tool. Mentors who possess the necessary qualities and competencies can be easily selected once the link between mentor competencies and mentee competency potentials has been established. In addition, the mentor competencies and outcomes (as a proposed further research) can provide a measurement tool by which the mentors can be assessed. Thus the linkages will provide a method for the mentors to be "graded" on the success of their mentorship and as such they can be remunerated accordingly. The current remuneration and measurement of the success of a mentor within Rachel's Angels is unscientifically done, with no transparent processes (Wilson, 2014). Mentors within the programme are unsure of how their performance will be measured as the process is not communicated, which inevitably leads to questions of unfairness and bias. By using the competencies and outcomes as a measure of performance, a certain level of transparency and scientific rigour may be reached in determining the success of each individual mentor.

The proposed further research of the mentee outcomes, competency potentials and competencies will provide further definitive guidance as to what competencies should be developed within mentors in order to reach certain objectives. The proposed future study regarding the outcomes of the youth mentorship programme as linked to the individual mentor- and mentee outcomes will provide definitive proof as to if the programme actually achieves the outcomes that it sets out to reach. Such a study will also provide insight into the non-anticipated outcomes of the programme for both mentors and mentee's.

The full scope of the current research as well as all proposed research will therefore provide a

complete guideline for the Rachel's Angels programme. Such research will shed light on the success of current practices and provide guidance as to where improvements may be made.

5.5 CONCLUSION

In an attempt to alleviate the impact of South Africa's political past several affirmative development projects have been launched. One such project includes the youth mentorship programme of Rachel's Angels, where disadvantaged adolescents are paired with university students in an attempt to achieve social-emotional-, developmental-, and academic outcomes in the lives of the adolescent mentees. The success of the Rachel's Angels project has been established through the continuous improvement of the adolescents involved, however in order to ensure the future success of the programme the exact factors that lead to a successful mentoring relationship between mentor and mentee needs to be identified.

The above study attempted to address the need within Rachel's Angels by developing a Mentor Competency Questionnaire, which was developed from the theoretical Mentor Competency Model, which combines the competency potentials of mentees with the competencies of mentors, in an attempt to identify the behavioural exchanges within the relationship. The competency model is rooted extensively in literature of youth mentorship and competency research, however it is the first study of its kind to combine the two fields of research. The development and validation of the MCQ will be the first step in the attempt to research youth mentorship empirically in South Africa. Although the analysis of the MCQ returned less than ideal results in the case of the discriminant validity, true insight was gained in terms of the necessary competencies required by a Rachel's Angels mentor – as indicated by the fit indices, item analysis and dimensionality analysis.

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APPENDICES

APPENDIX A

MENTOR COMPETENCY QUESTIONNAIRE

MENTEE FORM (OTHER-RATER)

Mentor Competency Questionnaire (MCQ)

MENTEE FORM

AUGUST 2015 |

PERSONAL DETAILS

Surname:

Name:

Age:

Gender:

Male	Female

Race:

White	Black	Coloured	Indian	Other

School:

Name of Mentor:

MENTOR COMPETENCY QUESTIONNAIRE

Instructions: The following questionnaire contains 36 questions. The questions are centred round the relationship you had with your mentor, and in this questionnaire you are asked to give honest feedback about your mentor. It is very important that you answer each question honestly. Everything you answer will be kept confidential – your mentor will not know what you answered.

Every question has a multiple choice answer, you have to mark your answer with an **X, for example:**

Example Question:

My mentor always greets me with a smile.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree
	X			

Do not hesitate to ask if you do not understand the question.

Be completely honest.

MENTOR COMPETENCY QUESTIONNAIRE

Please answer each of the following questions:

Question 1:

My mentor thought of me when he/she made decisions about our mentoring relationship.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 2:

I know that my mentor will support and encourage me in my upcoming matric exams.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 3:

When we met for the first time, my mentor tried his/her best to make me feel at ease so that we could talk to each other comfortably.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 4:

I felt that my mentor was able to handle the pressure of being a full-time student and a Rachel's Angels mentor.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 5:

I am able to talk to my mentor about things that bother me or makes me upset.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 6:

My mentor is a good role-model.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 7:

My mentor makes decisions in our mentoring relationship that benefits both of us.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 8:

I feel that I can achieve my goals because of the support given to me by my mentor.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 9:

My mentor was able to start our first conversation and made an effort to talk to me at our first meeting.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 10:

My mentor was able to cope with the differences in our cultures, languages and/or backgrounds.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 11:

My mentor listens to me when we have a conversation and will notice when I am upset about something.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 12:

My mentor sets a good example for me on how to behave when I am going through a difficult time or things are not going my way.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 13:

My mentor makes decisions in and about our relationship that I can respect.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 14:

My mentor supports me when I go through difficult times.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 15:

My mentor has made an effort to talk to me over the last two years, either by messaging me or calling me.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 16:

My mentor did not let any differences in culture/languages/backgrounds interfere in our relationship.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 17:

My mentor was able to be sensitive about certain issues and could address sensitive topics in such a way that I would not become offended.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 18:

I really look up to my mentor, he/she is a good example of what I want to be in a few years.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 19:

My mentor was able to know when I needed him/her to take the lead.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 20:

My mentor would support me even if I am not achieving success.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 21:

I feel that my mentor and I communicated enough in our relationship over the last two years.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 22:

My mentor is able to cope with my changing needs in our relationship.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 23:

My mentor understands when I experience difficulties, he/she is able to place themselves in my shoes and give me good advice.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 24:

I have learnt from my mentor how to handle conflict maturely.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 25:

My mentor knew when he/she did not have to take the lead, because I was comfortable and confident enough to be my own leader.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 26:

My mentor knew when I needed to be supported and gave me the necessary encouragement to get through difficult times.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 27:

My mentor regularly made contact with me.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 28:

When my needs change, my mentor is able to adapt and change the way he/she supports me.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 29:

I was comfortable enough in my relationship with my mentor to talk openly about sensitive things.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 30:

I see my mentor as a good example of how to achieve success in academic studies, because my mentor has shown me what it is to be a good student.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 31:

My mentor was able to take the lead in difficult situations.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 32:

Even if my mentor does not agree with my decisions, he/she will still support and encourage me to achieve success.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 33:

I felt comfortable enough in my relationship with my mentor to talk freely to him/her at any time.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 34:

My mentor is able to adapt to changes that occur because of decisions I made, even if he/she does not agree with the changes.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 35:

My mentor will try to understand what I am saying and try to see things from my point of view.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 36:

My mentor sets a good example of how to interact with others:

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Thank you for completing the MCQ!

APPENDIX B

MENTOR COMPETENCY QUESTIONNAIRE

MENTOR FORM (SELF-RATER)

Mentor Competency Questionnaire (MCQ)

MENTOR FORM

AUGUST 2015 |

UNIVERSITEIT•STELLENBOSCH•UNIVERSITY
jou kennisvennoot • your knowledge partner

STELLENBOSCH UNIVERSITY

CONSENT TO PARTICIPATE IN RESEARCH

Good Day!

Thank you for taking the time to fill out this questionnaire, which forms part of E'Louise Botes' M.Com thesis: The Development of a Mentor Competency Questionnaire for a Rachel's Angels mentor. You were selected to fill out this questionnaire because you are currently a mentor in the Rachel's Angels programme.

The questionnaire is being conducted in order to identify the competencies that has to be displayed by a successful mentor in Rachel's Angels. The results of the study will be used to improve the success of Rachel's Angels by ensuring that mentors are selected that will display a sufficient level of competence on the competencies.

You will be asked to complete a few questions regarding your relationship with your mentee(s). It takes 10 minutes to complete. Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Confidentiality will be maintained by means of safeguarding the data. Only the researcher and her supervisor will have access to the data. The data will only be used for the current study. The data as a whole will be published as an open-source Masters thesis accessible via Sun Scholar. However, no one individual will be identifiable in any of the publications. Feedback on the results of the study will be provided to the management of the Rachel's Angels Trust. Only aggregate results will however be reported. No feedback will be given on the individual results of any mentor.

Participation with this questionnaire is entirely voluntary. Should you feel uncomfortable at any time, you may stop. However, your participation is greatly appreciated. Should you have any queries, please feel free to contact the researcher, E'Louise Botes, at

elouisebotes01@gmail.com. If you have questions regarding your rights as a research subject, contact Ms. Malene Fouche (mfouche@sun.ac.za; 021 808 4622) at the Division for Research Development. You have the right to receive a copy of the Information and Consent form.

After reading the above, please choose one of the following two options:

☐ **I have read and understood the information provided and voluntary consent to participate in the research under the stipulated conditions.**

OR

☐ **I have read and understood the information provided and decline the invitation to participate in the research under the stipulated conditions.**

PERSONAL DETAILS

Name and Surname:

Age:

Gender:

Male	Female

Race:

White	Black	Coloured	Indian	Other

Degree and Year of Study (i.e. Bcomm Management, 3rd year):

Name of Mentee(s):

Do you give consent that your results be recorded for research purposes?

YES	NO

MENTOR COMPETENCY QUESTIONNAIRE

Instructions:

The following questionnaire contains 36 questions. The questions are centred round the relationship you had with your mentee, and in this questionnaire you are asked to give honest feedback about your own skills as a mentor. It is very important that you answer each question honestly. Everything you answer will be kept confidential – your mentee's will not know what you answered.

Please complete this questionnaire on a computer in its current Word Document format.

Every question has a multiple choice answer, you have to highlight your answer to each question:

Example Question:

I always greet my mentee me with a smile.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Do not hesitate to ask if you do not understand the question.

Be completely honest.

MENTOR COMPETENCY QUESTIONNAIRE

Please answer each of the following questions:

Question 1:

I thought of my mentee when I made decisions about our mentoring relationship.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 2:

I know that I will support and encourage my mentee in his/her upcoming matric exams.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 3:

When we met for the first time I tried my best to make my mentee feel at ease so that we could talk to each other comfortably.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 4:

I felt that I was able to handle the pressure of being a full-time student and a Rachel's Angels mentor.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 5:

My mentee talked to me about things that bothered him/her or made him/her upset.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 6:

I am a good role-model.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 7:

I made decisions in our mentoring relationship that benefited both me and my mentee.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 8:

Because of the support given by me, my mentee will feel that he/she can achieve his/her goals.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 9:

I was able to start our first conversation and make an effort to talk to my mentee at our first meeting.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 10:

I was able to cope with the differences in cultures, languages and/or backgrounds between me and my mentee.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 11:

I really listened to my mentee when we talked and I noticed when he/she was upset about something.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 12:

I set a good example for my mentee on how to behave when you are going through a difficult time or things are not going your way.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 13:

I made decisions in and about our relationship that my mentee can respect.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 14:

I supported my mentee when he/she was going through difficult times.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 15:

I have made an effort to talk to my mentee over the last two years, either by messaging or calling him/her.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 16:

I did not let any differences in culture/languages/backgrounds interfere in the relationship between me and my mentee.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 17:

I was able to be sensitive about certain issues and could address sensitive topics in such a way that my mentee would not become offended.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 18:

My mentee really looks up to me, I am an example of what my mentee should strive to be in a few years.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 19:

I was able to know when my mentee needed me to take the lead.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 20:

I supported my mentee even when he/she was not achieving success.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 21:

I feel that my mentee and I communicated enough in our relationship over the last two years.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 22:

I was able to cope with the changing needs of my mentee in our relationship.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 23:

I truly tried to understand when my mentee was experiencing difficulties, I was able to place myself in his/her shoes.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 24:

I have been an example to my mentee on how to handle conflict maturely.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 25:

I knew when I did not have to take the lead in our relationship, because my mentee was comfortable and confident enough to be his/her own leader.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 26:

I knew when I needed to support and encourage my mentee.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 27:

I regularly made contact with my mentee.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 28:

When my mentee's needs changed, I was able to adapt and change my mentoring style and the way I supported him/her.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 29:

I made my mentee feel comfortable enough in our relationship that he/she was able to talk openly to me about sensitive topics.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 30:

I see myself as a good example of how to achieve success in academic studies, because I have shown my mentee what it is to be a good student.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 31:

I was able to take the lead in difficult situations.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 32:

Even if I do not agree with my mentee's decisions, I will still support and encourage him/her to achieve success.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 33:

My mentee felt comfortable enough in our relationship to talk freely to me at any time.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 34:

I was able to adapt to changes that occurred because of decisions my mentee made, even if I did not agree with the changes.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 35:

I tried to always understand what my mentee was saying and tried to see things from his/her point of view.

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Question 36:

I set a good example of how to interact with others:

Strongly Agree	Agree	Neutral/Sometimes	Disagree	Strongly Disagree

Thank you for completing the MCQ!

APPENDIX C

MENTOR COMPETENCY QUESTIONNAIRE

MARKING GRID

MCQ Marking Grid

COMPETENCY	QUESTION NUMBERS
Leading and Deciding	1, 7, 13, 19, 25, 31
Supporting	2, 8, 14, 20, 26, 32
Initiating, Communicating and Interacting	3, 9, 15, 21, 27, 33
Adapting and Coping	4, 10, 16, 22, 28, 34
Empathy and Sensitivity	5, 11, 17, 23, 29, 35
Role-Modelling	6, 12, 18, 24, 30, 36